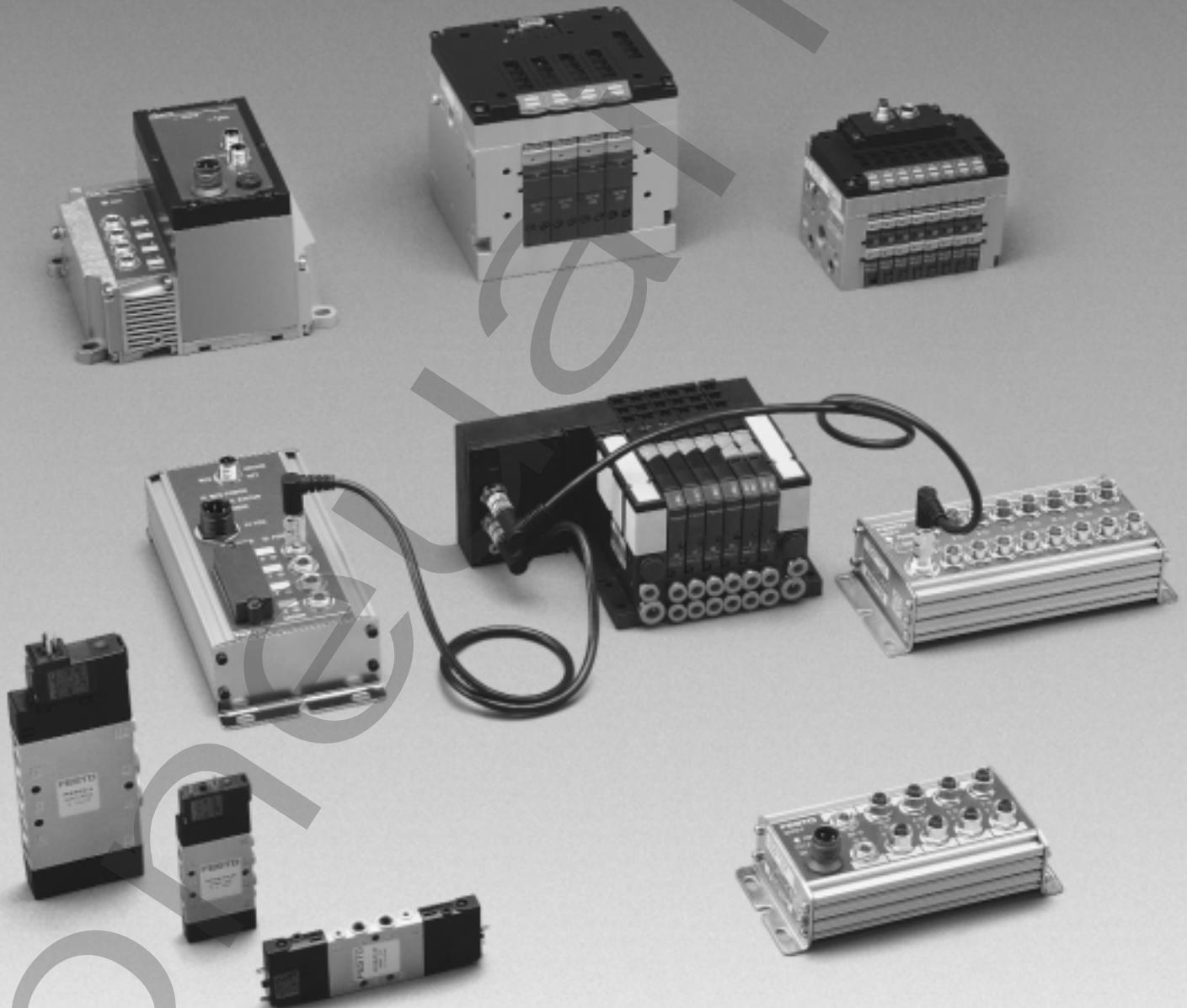


“Compact Performance” Valves and Valve Manifolds

FESTO



“Compact Performance” Valves and Valve Manifolds

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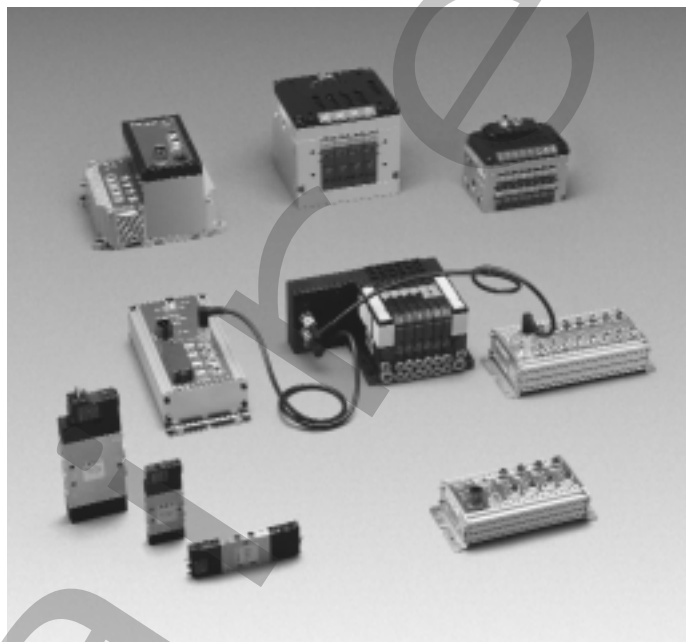
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A Totally Modular Valve Concept

The “Compact Performance” (CP) valve family constitutes a new series of competitively-priced manifolds and in-line valves which feature an innovative modular design, which optimizes flow in a small, compact package, offering rugged construction suitable for tough industrial environments.

The totally modular, plug-in construction of the manifold valves, Types CPV and CPA provides optimum flexibility to specify just the right combination of valve functions for your application. Modular top-hats enable you to select the connection type of your choice: DeviceNet or other device-level buses, ASi, multipin, or individual solenoid connections. It also provides efficiencies in production, assembly, and installation, which contribute to reducing the overall cost of the valves.

Decentralized Device Level Networks

For fieldbus applications the modular CP concept separates the valve manifold, sensor I/O and fieldbus interface node into individual modules, connected with a CP cable, enabling you to decentralize control and place the modules around the machine close to the actuators for shorter tubing and faster response.

Award Winning Design

The CP valve family has won several iF Awards for Design at the International Hannover Fair for their slim, modern style, which enhances the appearance of your machine.

**CPV Series 10, 14 and 18 mm
“Compact Performance” Manifolds**

CPV manifolds are available with 4, 6 or 8 valve positions. Manifolds are custom configured and factory assembled to your desired configuration with combinations of 3/2, 5/2 and/or 5/3-way functions.

- Rugged heavy-duty construction
- High flow rates 0.4, 0.85, 2.1 Cv / 400, 850, 2100 l/min
- Low-wattage coils (0.5 W, 0.75 W, 1.6 W)
- Up to 4 separate pressure zones
- Up to 8 relay plates for Fieldbus and DeviceNet manifolds
- Plug-in “Multipole” pneumatic sub-base options for inch or metric Quick Star push-pull fittings for fast manifold replacement without disconnecting tubing

New manifolds for DeviceNet™ connect directly to a DeviceNet network. DeviceNet and Fieldbus manifolds accommodate up to 16 solenoid coils / 8 valve positions.

**CPA Series 10 and 14 mm
“Compact Performance” Manifolds**

Light-weight polymer manifolds accommodate up to 22 valve positions and are custom configured and factory assembled with combinations of 3/2, 5/2 and 5/3-way functions.

- Easy to expand, just remove tie-rods and insert additional valves
- High flow rates 0.2 to 0.6 Cv / 200 to 600 l/min
- Low-wattage coils (0.75 W)
- Separate pressure zones
- Clip-in Quick Star push-pull or threaded fitting inserts for inch or metric tubing
- Fieldbus manifolds are configurable with up to 16 solenoid coils or valve positions
- “Smart Pneumatic Valve Manifold” systems with embedded Allen-Bradley SLC500™* controller technology or with embedded Festo programmable logic controller are also available

**CPE Series 10, 14, 18 and 24 mm
“Compact Performance” In-line Valves**

Compact, slim design CPE in-line single and double solenoid valves are available with 3/2, 5/2, and 5/3-way functions.

- High flow rates from 0.43 to 3.2 Cv / 430 to 3200 l/min
- 24V DC, 110V AC, and 230V AC solenoid coils
- Threaded ports for Quick Star push-pull fittings, for inch or metric tubing
- Available with or without external pilot
- New “Valve Bus Box” permits connection of individual CP valves to DeviceNet networks.



* Smart Pneumatic Valve Manifold is a trademark of Festo Corporation.
Allen-Bradley and A-B SLC500 are registered trademarks of Allen-Bradley, a Rockwell International Company.
DeviceNet is a registered trademark of ODVA.

“Compact Performance” Valves and Valve Manifolds

Valve Selection

Compact Performance valves and accessories may be found in several ways, depending on what you know about the product.

Table of Contents

If you already know the valve family most appropriate for your application and now need detailed information on specifications, dimensions and accessories, go to the contents on page 40.

Product Type/Part Number Indexes

If you know the product type or part number, indexes in the back of catalog provide an easy way to find the correct page.

Valve Manifolds for Field and Device-Level Buses

General Information on CP Valve manifolds for fieldbus and device-level buses as well as on “Smart Valve Manifolds” with embedded programmable controller, is on pages 46 to 51. Information specific to either the CPV or CPA valve families is found within the respective valve family section.

Ordering Information

Ordering information for each valve family can be found within the respective valve section. When ordering CPV or CPA valve manifolds for field or device-level buses, refer to both the valve section and the CP Electrical Section, where the information for specifying and ordering the fieldbus node and the electrical I/O modules can be found. The same electrical modules are used for both CPV and CPA valve families.

CPV, CPA and CPE Valve Section Organization

Each valve section contains a detailed table of contents and general information describing the features and benefits unique to the valve series.

A specifications page summarizes all relevant technical data for the valve series. This is followed by a page with the functional symbols and descriptions of the valves. Dimensional drawings for each valve manifold type (Fieldbus, DeviceNet, ASi, Multipin, and individual connection) follows.

Accessories

The accessories section includes data on solenoid sockets, cables, silencers, fittings and port plugs which are to be ordered separately.

CPE In-line Valves
3/2 - 3 Way, 2 Position, Solenoid Piloted, 24V DC

Single Solenoid Valves

Without socket, with manual override, normally closed
Type CPE10-M1H-3GL-M7
With M7 threads
Type CPE10-M1H-3GL-M5

Valves with external pilot air
With M7 threads
Type CPE10-M1H-3GLS-M7
With M5 threads
Type CPE10-M1H-3GLS-M5

Example: Type CPE10-M1H-3GL-M7

Function:
Type CPE10-M1H-3GL-...
Type CPE10-M1H-3GLS-...

Accessories:
Sockets with cable:
Order Code 180519 KMYZ-4-24-0.5 (1.5 ft / 0.5 m)
180520 KMYZ-4-24-2.5 (8.2 ft / 2.5 m)
34997 KMYZ-2-24-2.5-LED (8.2 ft / 2.5 m)
34998 KMYZ-2-24-2.5-LED (16 ft / 5 m)
see page 168

Quick Star fittings: see pages 173-174

Silencers:
Order Code 163978 U-M3 for connection B2
161418 UC-M7 for connection 3
see pages 176-177

Manual override:
Order Code 157600 AHB-M2B

Order Code 161671 CPE10-M1H-3GL-M7
Part Number/Type 162888 CPE10-M1H-3GL-M5
Medium Compressed air, filtered, lubricated or unlubricated
Design Special valve
Mounting Two through holes in housing
Connection 1, 2, 3
15, 12, 10
Orifice Size 0.16 in / 4 mm
Flow Rate 685 l/min C_v / 100 l/min M7 0.40 C_v / 400 l/min
Operating Pressure Range 37.5 to 120 psi / 2.5 to 8 bar 26.5 to 150 psi / 0.9 to 10 bar
Burst Pressure Range On: 14 ms, Off: 14 ms 37.5 to 120 psi / 2.5 to 8 bar
Switching Time 23 to 122°F / 5 to +50°C
Ambient Temperature 23 to 122°F / 5 to +50°C
Medium Temperature
Material One-piece aluminum body, steel spool, polyimide and caps, PMSR seals
Weight 0.10 lb / 0.045 kg
Supply Voltage 24V DC
Power Consumption 1 W
Duty Cycle 100%
Protection with Plug IP 65 (DIN 40050)

96 (page 115-116) Subject to change

CPV Valve Manifolds
Valve Manifold with Fieldbus Interface

Valve Manifold With Fieldbus Interface
Type CPV-...-VI-FB-...

The valve manifold, Type CPV-VI-FB-... available with four, six, or eight valve positions, has plug-in electrical connections for integrating the manifold into fieldbus networks via twisted wire cable to a separate fieldbus node. A second plug-in connection is provided for connecting a separate electrical input/output module in series. Electrical power and control signals are transmitted over the twisted wire cable. Up to four branches with max. 16 inputs and 16 outputs each can be connected to one fieldbus node. Type FB-... depending on the fieldbus protocol selected.

A pneumatic multipole plate is available which contains all pneumatic connections on one removable plate that mounts to the bottom of the manifold, simplifying installation and maintenance.

Dimensions
a 1.18 in / 30 mm

Dimensions for identification plate
Pneumatic multipole plate
Support for identification plate

See page 63 for pneumatic multipole.
See page 116 for cables.

Dimensions

	Micro Valve Manifold (10 mm) CPV-10-...-VI-FB-...				Mini Valve Manifold (14 mm) CPV-14-...-VI-FB-...				Mid Valve Manifold (18 mm) CPV-18-...-VI-FB-...			
	4	6	8		4	6	8		4	6	8	
valve positions	4	6	8	valve positions	4	6	8	valve positions	4	6	8	
L 1	2.78 / 70	3.54 / 90	4.33 / 110	3.94 / 96	4.88 / 124	5.88 / 150	6.91 / 178	8.03 / 204	8.61 / 218	9.61 / 245	10.61 / 271	
L 2	2.43 / 61.8	3.22 / 81.8	4.01 / 101.8	3.39 / 86	4.01 / 101	4.63 / 118	5.25 / 134	5.87 / 150	6.49 / 165	7.11 / 181	7.73 / 197	
L 3	2.44 / 62	2.44 / 62	2.44 / 62	3.07 / 78	3.07 / 78	3.07 / 78	3.07 / 78	3.07 / 78	3.07 / 78	3.07 / 78	3.07 / 78	
L 4	2.78 / 70	2.78 / 70	2.78 / 70	3.43 / 87.07	3.43 / 87.07	3.43 / 87.07	3.43 / 87.07	3.43 / 87.07	3.43 / 87.07	3.43 / 87.07	3.43 / 87.07	
L 5	1.58 / 39.92	1.58 / 39.92	1.58 / 39.92	2.43 / 61.80	2.43 / 61.80	2.43 / 61.80	2.43 / 61.80	2.43 / 61.80	2.43 / 61.80	2.43 / 61.80	2.43 / 61.80	
L 6			0.93 / 23.5									
L 7	0.39 / 10	0.39 / 10	0.39 / 10	0.91 / 23	0.91 / 23	0.91 / 23	0.91 / 23	0.91 / 23	0.91 / 23	0.91 / 23	0.91 / 23	
L 8	1.97 / 50	2.75 / 70	3.54 / 90	1.97 / 50	2.75 / 70	3.54 / 90	4.33 / 110	5.11 / 130	5.89 / 150	6.67 / 170	7.45 / 190	
L 9		2.07 / 52.8		2.31 / 58.80	2.31 / 58.80	2.31 / 58.80	2.31 / 58.80	2.31 / 58.80	2.31 / 58.80	2.31 / 58.80	2.31 / 58.80	
L 11	1.81 / 46	1.81 / 46	1.81 / 46	1.81 / 46	1.81 / 46	1.81 / 46	1.81 / 46	1.81 / 46	1.81 / 46	1.81 / 46	1.81 / 46	
L 16	0.93 / 15	0.93 / 15	0.93 / 15	0.93 / 15	0.93 / 15	0.93 / 15	0.93 / 15	0.93 / 15	0.93 / 15	0.93 / 15	0.93 / 15	
L 17				0.37 / 9.5	0.37 / 9.5	0.37 / 9.5	0.37 / 9.5	0.37 / 9.5	0.37 / 9.5	0.37 / 9.5	0.37 / 9.5	

48 (page 115-116) Subject to change

"Compact Performance" Valves and Valve Manifolds

General Ordering Information

FESTO

The following general guidelines should be considered when ordering CP Valve Manifolds.

CP Valve Manifolds

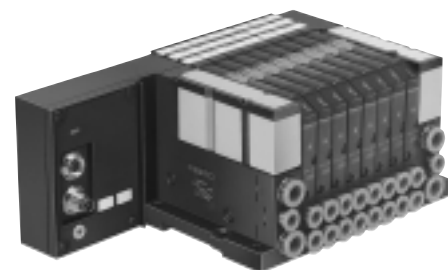
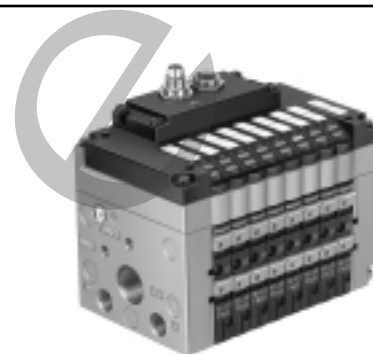
Two valve families constitute the CP valve manifold range: CPV manifolds and CPA manifolds. The manifolds can be configured with multipin, ASi, Fieldbus, or individual solenoid connections. Each valve family offers unique features and advantages which will make one or the other most suitable for your application.

The procedure for ordering CPV and/or CPA manifolds is basically the same; **the order number consists of a simple string of code letters** to be entered on a "pneumatic" order form from component selection tables provided within each valve family section. Simply identify the components to be included on the manifold and enter the respective code letters in the blank boxes provided in the order string.

Manifold accessories have either an order code, or are listed with a part number. If an order code is provided, simply enter the code in the order string box. Accessories such as electrical cables and connectors identified with a part number are to be ordered separately. Indicate the cable/connector type, part number, and quantity desired along with the manifold order form.

CPV Valve Manifolds for Direct-Link to DeviceNet Networks

The newest addition to the CPV valve family are manifolds with integral circuitry for connecting directly to DeviceNet networks without a separate interface node. A separate order form is included for these.



CPV Valve Manifolds		FESTO																																																																																																																																								
Fieldbus Manifold Order Form																																																																																																																																										
2 Choose number of stations and enter quantity below.																																																																																																																																										
# of Stations	Micro Manifold (10 mm)	Mini Manifold (14 mm)	Midi Manifold (18 mm)																																																																																																																																							
8	CPV10-V-FB-8	CPV14-V-FB-8	CPV18-V-FB-8																																																																																																																																							
6	CPV10-V-FB-6	CPV14-V-FB-6	CPV18-V-FB-6																																																																																																																																							
4	CPV10-V-FB-4	CPV14-V-FB-4	CPV18-V-FB-4																																																																																																																																							
1 Choose valve size, <input checked="" type="checkbox"/> box and enter below.																																																																																																																																										
<input type="checkbox"/> Micro Manifold (10 mm), PIN 18200 <input type="checkbox"/> Mini Manifold (14 mm), PIN 18210 <input type="checkbox"/> Midi Manifold (18 mm), PIN 18220																																																																																																																																										
Enter Configuration Codes: 0 1 2 3 4 5 6 7 Accessories 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100																																																																																																																																										
<table border="1"> <thead> <tr> <th>Code</th> <th>Description</th> <th>10 mm Micro Manifold</th> <th>14 mm Mini Manifold</th> <th>18 mm Midi Manifold</th> </tr> </thead> <tbody> <tr> <td colspan="5">4 Valves (Choose valve functions and enter codes above.)</td> </tr> <tr> <td>M</td> <td>1/2 Double Solenoid Valve</td> <td>CPV10-MH-S-M7</td> <td>CPV14-MH-S-M7</td> <td>CPV18-MH-S-M7</td> </tr> <tr> <td>J</td> <td>1/2 Double Solenoid Valve</td> <td>CPV10-MH-S-M7</td> <td>CPV14-MH-S-M7</td> <td>CPV18-MH-S-M7</td> </tr> <tr> <td>G</td> <td>1/2 Double Solenoid Valve</td> <td>CPV10-MH-S-M7</td> <td>CPV14-MH-S-M7</td> <td>CPV18-MH-S-M7</td> </tr> <tr> <td>N</td> <td>2x3/2 Valve N.O.</td> <td>CPV10-MH-2x3/2-S-M7</td> <td>CPV14-MH-2x3/2-S-M7</td> <td>CPV18-MH-2x3/2-S-M7</td> </tr> <tr> <td>C</td> <td>2x3/2 Valve N.C.</td> <td>CPV10-MH-2x3/2-S-M7</td> <td>CPV14-MH-2x3/2-S-M7</td> <td>CPV18-MH-2x3/2-S-M7</td> </tr> <tr> <td>H</td> <td>2 x 3/2 Valves 1-N.O., 1-N.C.</td> <td>CPV10-MH-3x3/2-S-M7</td> <td>CPV14-MH-3x3/2-S-M7</td> <td>CPV18-MH-3x3/2-S-M7</td> </tr> <tr> <td>T</td> <td>Isolating Plate (Ports 1/11 closed)</td> <td>CPV10-D2PR</td> <td>CPV14-D2PR</td> <td>CPV18-D2PR</td> </tr> <tr> <td>S</td> <td>Isolating Plate (Ports 1/11, 3/5 closed)</td> <td>CPV10-D2PR</td> <td>CPV14-D2PR</td> <td>CPV18-D2PR</td> </tr> <tr> <td>L</td> <td>Blank Position Plate</td> <td>CPV10-R2P</td> <td>CPV14-R2P</td> <td>CPV18-R2P</td> </tr> <tr> <td>R</td> <td>Relay Plate</td> <td>CPV10-RP2</td> <td>CPV14-RP2</td> <td>CPV18-RP2</td> </tr> <tr> <td colspan="5">3 Manual Override (Choose manual override and enter codes above.)</td> </tr> <tr> <td>N</td> <td>Push, spring return</td> <td></td> <td></td> <td></td> </tr> <tr> <td>R</td> <td>Detented with slide</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="5">5 Pressure Supply Endplates (Choose endplate configuration and enter codes above.)</td> </tr> <tr> <td>U</td> <td>Internal S-Pilot, right side</td> <td></td> <td></td> <td></td> </tr> <tr> <td>V</td> <td>Internal S-Pilot, left side</td> <td></td> <td></td> <td></td> </tr> <tr> <td>W</td> <td>External S-Pilot, right side</td> <td></td> <td></td> <td></td> </tr> <tr> <td>X</td> <td>External S-Pilot, left side</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Y</td> <td>Internal S-Pilot, both sides</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Z</td> <td>External S-Pilot, both sides</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="5">6 Accessories (Choose desired accessories and enter codes above.)</td> </tr> <tr> <td>H</td> <td>On Rail Mounting Bracket</td> <td>CPV10-14-V-BG-RW-35</td> <td>CPV14-18-V-BG-RW-35</td> <td>CPV18-18-V-BG-RW-35</td> </tr> <tr> <td>M</td> <td>Pneumatic Multipole (Flange mounting)</td> <td>4 Station: CPV10-V-P4-M7 6 Station: CPV10-V-P6-M7 8 Station: CPV10-V-P8-M7</td> <td>4 Station: CPV14-V-P4-M7 6 Station: CPV14-V-P6-M7 8 Station: CPV14-V-P8-M7</td> <td>4 Station: CPV18-V-P4-M7 6 Station: CPV18-V-P6-M7 8 Station: CPV18-V-P8-M7</td> </tr> <tr> <td>P</td> <td>Pneumatic Multipole (Flange mounting)</td> <td>4 Station: CPV10-V-P4-M7-B 6 Station: CPV10-V-P6-M7-B 8 Station: CPV10-V-P8-M7-B</td> <td>4 Station: CPV14-V-P4-M7-B 6 Station: CPV14-V-P6-M7-B 8 Station: CPV14-V-P8-M7-B</td> <td>4 Station: CPV18-V-P4-M7-B 6 Station: CPV18-V-P6-M7-B 8 Station: CPV18-V-P8-M7-B</td> </tr> <tr> <td>Z</td> <td>Label Holder</td> <td>CPV10-V-BZ-T-X</td> <td>CPV14-V-BZ-T-X</td> <td>CPV18-V-BZ-T-X</td> </tr> </tbody> </table>				Code	Description	10 mm Micro Manifold	14 mm Mini Manifold	18 mm Midi Manifold	4 Valves (Choose valve functions and enter codes above.)					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U	Internal S-Pilot, right side				V	Internal S-Pilot, left side				W	External S-Pilot, right side				X	External S-Pilot, left side				Y	Internal S-Pilot, both sides				Z	External S-Pilot, both sides				6 Accessories (Choose desired accessories and enter codes above.)					H	On Rail Mounting Bracket	CPV10-14-V-BG-RW-35	CPV14-18-V-BG-RW-35	CPV18-18-V-BG-RW-35	M	Pneumatic Multipole (Flange mounting)	4 Station: CPV10-V-P4-M7 6 Station: CPV10-V-P6-M7 8 Station: CPV10-V-P8-M7	4 Station: CPV14-V-P4-M7 6 Station: CPV14-V-P6-M7 8 Station: CPV14-V-P8-M7	4 Station: CPV18-V-P4-M7 6 Station: CPV18-V-P6-M7 8 Station: CPV18-V-P8-M7	P	Pneumatic Multipole (Flange mounting)	4 Station: CPV10-V-P4-M7-B 6 Station: CPV10-V-P6-M7-B 8 Station: CPV10-V-P8-M7-B	4 Station: CPV14-V-P4-M7-B 6 Station: CPV14-V-P6-M7-B 8 Station: CPV14-V-P8-M7-B	4 Station: CPV18-V-P4-M7-B 6 Station: CPV18-V-P6-M7-B 8 Station: CPV18-V-P8-M7-B	Z	Label Holder	CPV10-V-BZ-T-X	CPV14-V-BZ-T-X	CPV18-V-BZ-T-X
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N	2x3/2 Valve N.O.	CPV10-MH-2x3/2-S-M7	CPV14-MH-2x3/2-S-M7	CPV18-MH-2x3/2-S-M7																																																																																																																																						
C	2x3/2 Valve N.C.	CPV10-MH-2x3/2-S-M7	CPV14-MH-2x3/2-S-M7	CPV18-MH-2x3/2-S-M7																																																																																																																																						
H	2 x 3/2 Valves 1-N.O., 1-N.C.	CPV10-MH-3x3/2-S-M7	CPV14-MH-3x3/2-S-M7	CPV18-MH-3x3/2-S-M7																																																																																																																																						
T	Isolating Plate (Ports 1/11 closed)	CPV10-D2PR	CPV14-D2PR	CPV18-D2PR																																																																																																																																						
S	Isolating Plate (Ports 1/11, 3/5 closed)	CPV10-D2PR	CPV14-D2PR	CPV18-D2PR																																																																																																																																						
L	Blank Position Plate	CPV10-R2P	CPV14-R2P	CPV18-R2P																																																																																																																																						
R	Relay Plate	CPV10-RP2	CPV14-RP2	CPV18-RP2																																																																																																																																						
3 Manual Override (Choose manual override and enter codes above.)																																																																																																																																										
N	Push, spring return																																																																																																																																									
R	Detented with slide																																																																																																																																									
5 Pressure Supply Endplates (Choose endplate configuration and enter codes above.)																																																																																																																																										
U	Internal S-Pilot, right side																																																																																																																																									
V	Internal S-Pilot, left side																																																																																																																																									
W	External S-Pilot, right side																																																																																																																																									
X	External S-Pilot, left side																																																																																																																																									
Y	Internal S-Pilot, both sides																																																																																																																																									
Z	External S-Pilot, both sides																																																																																																																																									
6 Accessories (Choose desired accessories and enter codes above.)																																																																																																																																										
H	On Rail Mounting Bracket	CPV10-14-V-BG-RW-35	CPV14-18-V-BG-RW-35	CPV18-18-V-BG-RW-35																																																																																																																																						
M	Pneumatic Multipole (Flange mounting)	4 Station: CPV10-V-P4-M7 6 Station: CPV10-V-P6-M7 8 Station: CPV10-V-P8-M7	4 Station: CPV14-V-P4-M7 6 Station: CPV14-V-P6-M7 8 Station: CPV14-V-P8-M7	4 Station: CPV18-V-P4-M7 6 Station: CPV18-V-P6-M7 8 Station: CPV18-V-P8-M7																																																																																																																																						
P	Pneumatic Multipole (Flange mounting)	4 Station: CPV10-V-P4-M7-B 6 Station: CPV10-V-P6-M7-B 8 Station: CPV10-V-P8-M7-B	4 Station: CPV14-V-P4-M7-B 6 Station: CPV14-V-P6-M7-B 8 Station: CPV14-V-P8-M7-B	4 Station: CPV18-V-P4-M7-B 6 Station: CPV18-V-P6-M7-B 8 Station: CPV18-V-P8-M7-B																																																																																																																																						
Z	Label Holder	CPV10-V-BZ-T-X	CPV14-V-BZ-T-X	CPV18-V-BZ-T-X																																																																																																																																						

Quick Start: push-pull fittings are ordered separately, see pages 141-142.

Subject to change

CPV Pneumatic Manifold Order Form

“Compact Performance” Valves and Valve Manifolds

General Ordering Information

CP Manifold Bus Systems

The following general guidelines should be considered when ordering Decentralized CP Manifold Bus Systems.

To order decentralized manifold bus systems for fieldbus and device-level networks, fill in a **“pneumatic” order form** for each valve manifold as described on page 43, and one **“electrical configuration” order form** for the electrical modules desired (Note: only Fieldbus CPV and/or CPA valve manifolds can be inserted in the CP manifold system).

The **“electrical configuration” order form** includes a chart which provides an easy method of visualizing the complete decentralized manifold bus system, with pneumatic manifolds, electrical modules and branching cables. Enter the codes for the desired node and for each individual branch in the chart. Then build the order string by transferring the individual branch codes to the configuration code order string boxes below the chart.

Ordering Fittings and Silencer Accessories

CPV manifolds: All CPV manifolds have metric threaded connections. Fittings for inch and metric tubing, and silencers are ordered separately or can be ordered factory preassembled (code A). Ordering information (part number and type) can be found in the accessories section.

CPA manifolds: Inch or metric push-pull or threaded fittings for CPA manifolds have order codes for inclusion in the manifold order string. If the “ducted exhaust” option is selected, order silencers separately. See the accessories section for ordering silencers.

CPE In-line Valves

The order number for CPE valves consists of a part number and a type designation.

Example:

Part Number Type
196925 CPE10-M1BH-5J-M7

The order number is for the valve only. Order the sockets or sockets with cables, and any accessories such as fittings and silencers separately.

Example:

Part Number Type
151688 KMYZ-9-24-2.5-LED-B Socket with 8.2 ft cable, integral LED and circuit protection
165003 UC-M5 Silencers for exhaust ports

Fittings are available for inch and metric tubing. See pages 173 and 174 for full selection.

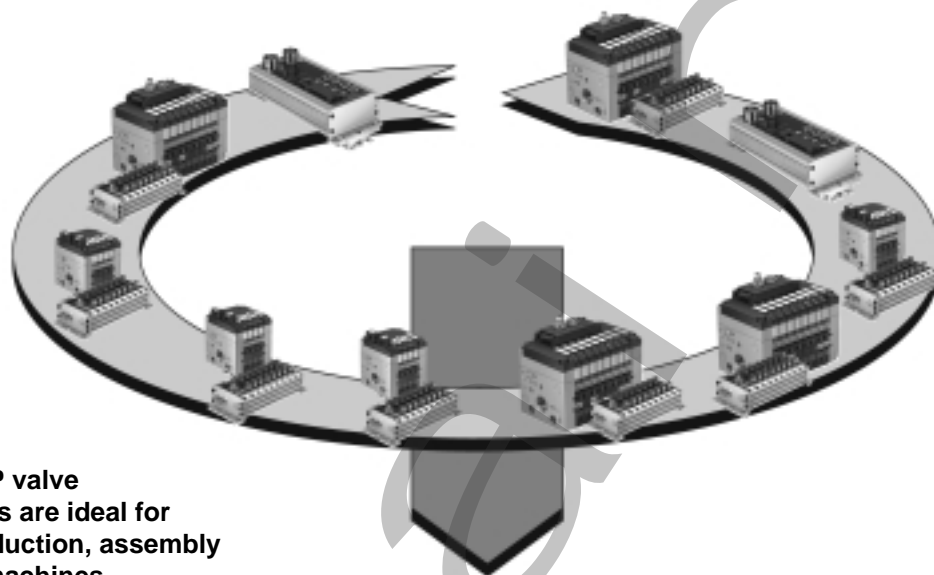
CPV Electrical Configuration Order Form



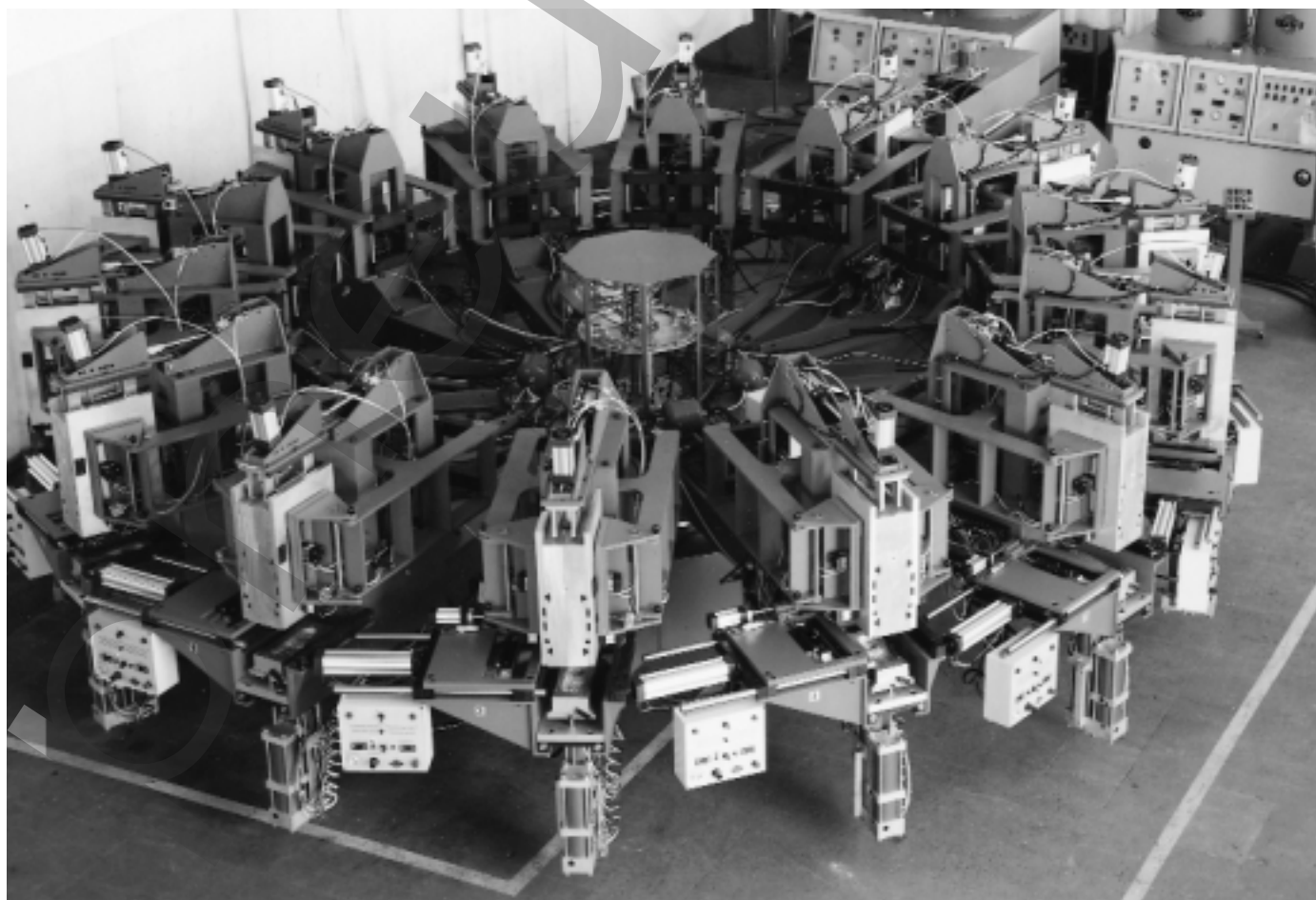
“Compact Performance” CP Valve Manifolds

Applications

Compact Performance valve manifolds are appropriate for most industrial applications where compact size and high-flow performance are required. Where fieldbus and device-level networks are involved, the modular CP concept permits decentralizing the manifolds and electrical I/O modules, allowing you to mount the modules close to the actuators on the machine.



Decentralized CP valve manifold systems are ideal for multistation production, assembly and packaging machines.



Modular CPV and CPA Decentralized Pneumatic Control System Flexibility

Compact Performance Valve Manifolds Bring Control to Where the Action is... Close to the Actuators.

The "CP" pneumatic valve manifold system is a totally new design concept for integrating pneumatic valves in automated systems.

By decentralizing the conventional one-piece valve manifold into separate modules —bus node, valve manifold, and sensor I/O—and connecting them by a single cable, control can be brought close to pneumatic actuators on the machine for faster response, higher cycle rates, and improved performance.

Decentralized control saves on wiring costs and labor, shortens tubing lengths, and saves on weight and space, and typically provides more control flexibility than conventional one-piece pneumatic manifolds.

Up to four branches can be connected to a single CP node, each with cable lengths up to ten meters per branch. All sizes of CPV and CPA type manifolds can be incorporated on the same system. Up to 64 inputs and 64 outputs can be connected to a single CP node, depending on the protocol selected.

The modular manifolds can be configured to your unique specifications. Type CPV and CPA manifolds can be configured with up to 16 solenoid coils each in combinations of 3/2, 5/2 and/or 5/3-way single and/or double solenoid valves.

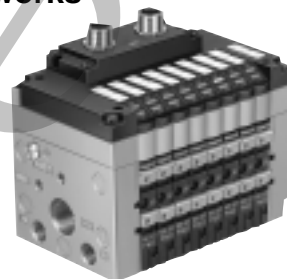
Additional Advantages

- Plug-in design speeds installation, lowers maintenance costs
- Systems are easy to modify and expand
- Manifolds are Pre-assembled and tested
- Integrated electronics and plug-in connections reduces chances of wiring errors
- IP 65 rated
- High immunity to EMI

New CPV manifolds with embedded DeviceNet circuitry connect Directly to DeviceNet networks, eliminating the need for a separate interface node.

Interfaces to Device-level Networks

CPV Manifold with direct interface to DeviceNet

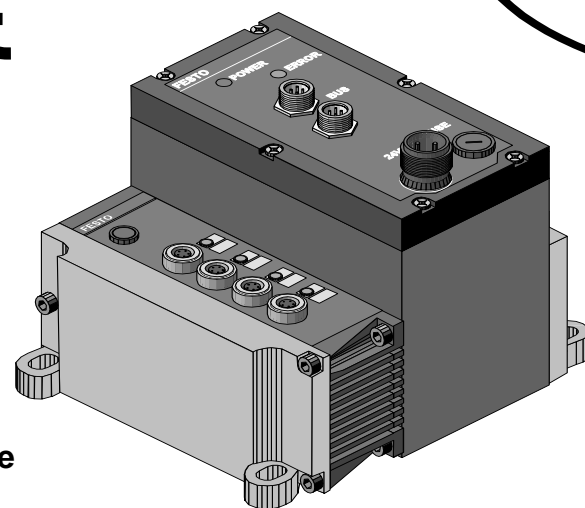
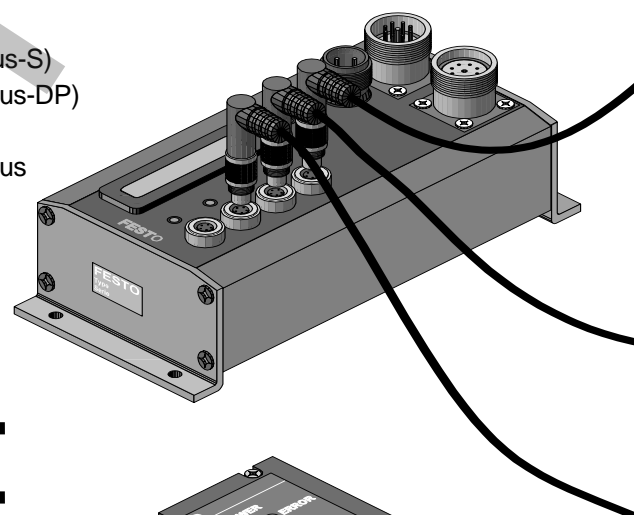


Fieldbus Interface Nodes with up to 4 decentralized I/O branches

Economy Node

Protocols

- Festo
- Phoenix (Interbus-S)
- Siemens (Profibus-DP)
- DeviceNet™
- Siemens (Profibus -DP, 12 MB)



Type 03 Node

Protocols

- Allen Bradley 1771 Remote I/O
- Festo SF3 "Smart" Manifolds, with embedded programmable controller and fieldbus networking capability
- SB/SF6 "Smart" Manifolds, with Allen Bradley SLC500™ Technology

Allen-Bradley and Allen-Bradley SLC500 are registered trademarks of Allen-Bradley Company, a Rockwell International Company.

Encompass is a trademark of Rockwell International.

DeviceNet is a registered trademark of the Open DeviceNet Vendors Association.

Type CPV Valve Manifolds

- 4, 6, or 8 valves per manifold
- 3/2 Single Solenoid Valves or 5/2 Single/Double Solenoid Valves
- 5/3 valve function via dual 3/2 valves
- Can be configured with up to 4 pressure zones, including vacuum

Type CPA Valve Manifolds

- Up to 16 valves per manifold
- 3/2 Single Solenoid Valves or 5/2 Single/Double Solenoid Valves
- 5/3 Valves
- Can be configured with separate pressure zones, including vacuum

Input Modules

Electrical signals (for example, from cylinder sensors) can be picked up locally by compact input modules. Up to 64 inputs maximum per node.

Input Module

16 inputs
8 x M12 - thread
(2 inputs per connector)

Input Module

16 inputs
16 x M8 - thread

Input Module

CPA Manifolds 10 and 14 mm

CPV Manifolds 10, 14 and 18 mm

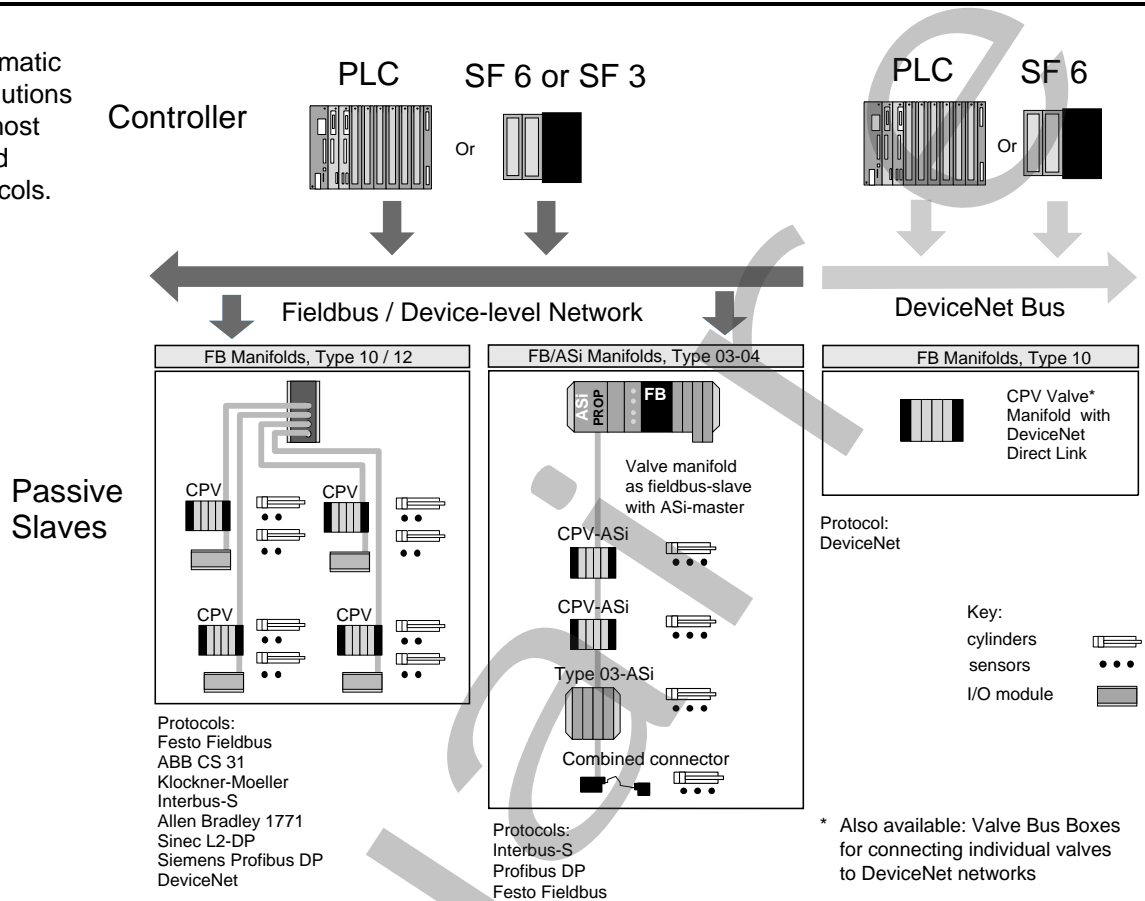
Output Module

8 outputs
8 x M12 - thread
8 outputs can be connected via bus-compatible electrical output modules.

"Compact Performance" Valves and Valve Manifolds

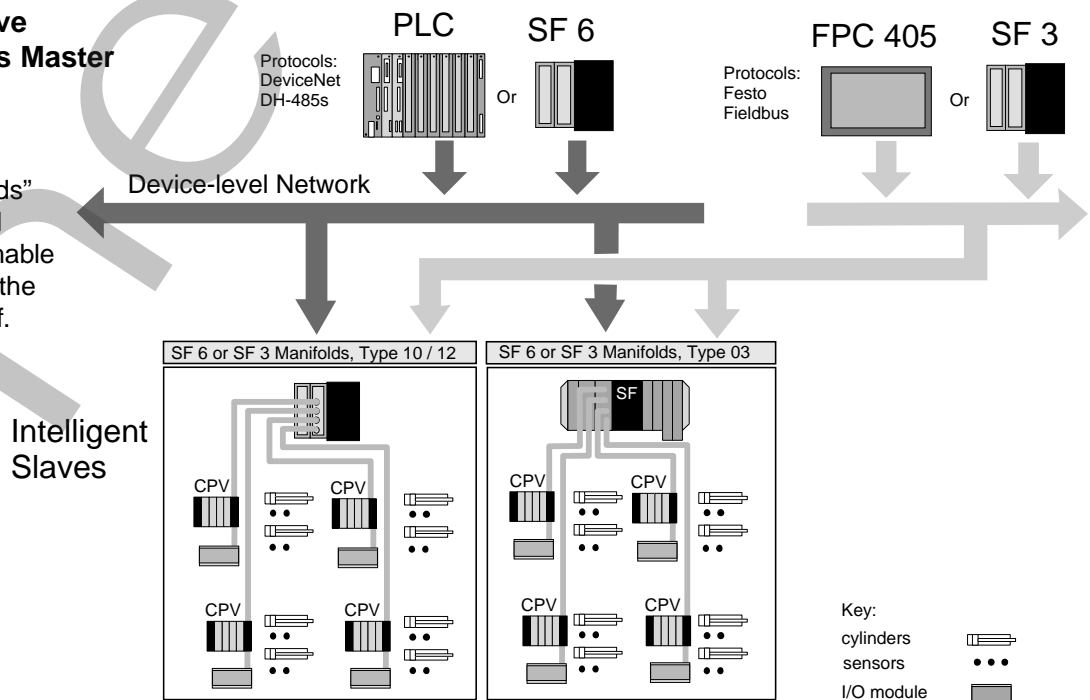
Fieldbus Networking Options

Festo offers pneumatic valve manifold solutions compatible with most major fieldbus and device-level protocols.



Smart Pneumatic Valve Manifolds as Fieldbus Master or Slave Station

Festo also offers "Smart Pneumatic Valve Manifolds" which incorporate the full functionality of programmable controllers embedded in the valve manifold node itself. These are capable of providing stand-alone machine control or they can serve as a master or "intelligent" slave on a bus network.



“Compact Performance” Valves and Valve Manifolds

FESTO

Fieldbus Networking Options

Control Block	Fieldbus Protocol	Control Block Design	Branches/ Inputs/Outputs
FB5	Festo ABB CS31 Klockner-Moeller (Suconet K)	Economy	4 Branches, 64 I / 64 O
FB6	Interbus-S	Economy	4 Branches, 64 I / 64 O
FB8	Allen-Bradley 1771 Remote I/O	Type 03 + CP Module	4 Branches, 64 I / 64 O
FB9*	Sinec L2-DP Profibus DP (1.5 MB)	Economy	4 Branches, 64 I / 64 O
FB11	DeviceNet	Economy	4 Branches, 64 I / 64 O
FB13	Profibus DP (12 MB)	Economy	4 Branches, 64 I / 64 O
SB60	Embedded A-B SLC500	Type 03 + CP Module	4 Branches, 64 I / 64 O
SF60	Embedded A-B SLC500 plus DeviceNet	Type 03 + CP Module	4 Branches, 64 I / 64 O
SF3	Festo fieldbus	Type 03 + CP Module	4 Branches, 64 I / 64 O

* For replacement applications only.

FB6, Interbus-S*

Phoenix Interbus-S is an open, non-proprietary actuator-sensor-level bus system which is compatible with a wide range of host controllers having an Interbus-S controller board, including: PC-compatible systems, VME bus systems, and programmable controller systems such as GE-Fanuc 90-70*, Siemens Simatic* S5, S7, and Modicon 984* or Quantum*. Users of PC compatible controllers can control Festo fieldbus valve manifolds. With VME bus or PLC-based host controllers users can program in the language of the host controller to connect up to 64 valve manifolds. Interbus-S offers fast scan rates.

FB8, Allen-Bradley 1771 Remote I/O*

Compatible with several Allen-Bradley programmable controller families: A-B PLC-2, A-B PLC-3 and A-B PLC-5 (control of up to 32 Festo valve manifolds), A-B SLC 500* (control of up to 16 Festo valve manifolds).

Festo valve manifolds are perceived by A-B PLCs as standard quarter or half racks of Allen-Bradley Remote I/O. There's no need to learn new programming. The I/O rack number, starting I/O group, and baud rate are simply set via switches in the FB8 interface.

FB13, Siemens, Profibus DP*

Compatible with TI*, Siemens S5 or S7* controllers, or any other PLC or PC card which supports Profibus-DP. The program in your SIMATIC PLC controls Festo valve manifolds as it would standard ET200 digital I/O. There is no need to learn new programming. The station number is set via switches on the FB13 interface. The baud rate is auto-configuring. Control of up to 122 Festo valve manifold nodes is possible.

Decentralized Control of multi-station applications



FB11, DeviceNet™

DeviceNet is an open, non-proprietary actuator-sensor-level bus system which is compatible with Allen-Bradley SLC500 and PLC-5 programmable controllers as well as with a wide range of other host controllers incorporating a DeviceNet scanner. Scanner hardware is available for popular bus architectures, including ISA and VME bus. Control of up to 64 Festo valve manifold nodes is possible on a single network. Baud rates (125, 250, 500 kB) are set by switches on the FB11 interface.

*Note: All product and company names are trademarks or registered trademarks of their respective holders.

“Compact Performance” CPV Manifolds for DeviceNet

CPV/CPA Valve Manifold Systems for DeviceNet™

Economy Node, Type FB11 for DeviceNet Networks

Festo's economy node, Type FB11, provides a compact, economical solution for interfacing CPV and CPA valve manifolds and electrical I/O modules to your DeviceNet network via a single cable. Up to four branches, each with 32 I/O can be connected to one economy node. The manifolds and I/O modules are connected via cables with integral plug-in connectors over distances up to 32.8 ft. (10 meters) per branch.



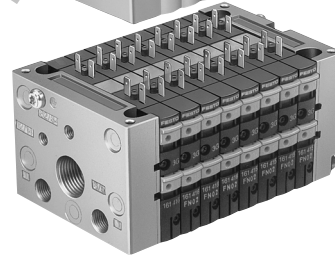
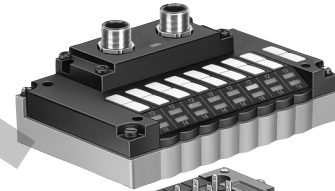
CPV Manifolds with Embedded DeviceNet Direct Interface

Individual CPV manifolds are now available with embedded DeviceNet interface. The manifolds connect directly to the DeviceNet Network.

- DeviceNet compatible
- Available for 10 mm, 14 mm and 18 mm CPV valve manifolds
- Manifolds include 8 valve positions, and support up to 16 solenoids
- Mix 3/2, 5/2 and 5/3-way valves on one manifold as desired
- Integrated plug-in pneumatic multipole plates
- All valves feature LED and integral circuit protection

The DeviceNet compliant electronics are implemented using modern, double-sided surface mount technology for reliable operation. No trouble-prone discrete wiring is used. Operating power is derived from the DeviceNet bus. The full DeviceNet permissible range (11-28V DC) is supported. Solenoids are powered by a separate connector, enabling E-stop functions and applying less burden to the DeviceNet Network.

Note: Input modules cannot be connected to DeviceNet manifolds.



Valve Bus Box for DeviceNet

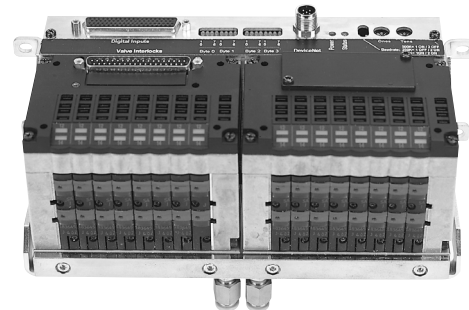
Valve Bus Boxes with integral DeviceNet circuitry are available for connecting individual CP valves or vacuum generators to DeviceNet networks. Each Valve Bus Box has optically isolated I/O; two outputs for controlling the valve, plus two inputs for connecting PNP sensors.

The Valve Bus Box will be phased-out on 8/31/05.



Standardized Custom Design Manifolds with DeviceNet Compatibility

Festo produces custom designs to meet unique industry application requirements. For example, single and double CPV manifolds for the semiconductor and other industries are available, which feature electrical safety interlock inputs with external 24V DC power supply, and forcing inputs for actuating individual valves regardless of DeviceNet status. Patented US 6,041,415.



DeviceNet

DeviceNet is a low-cost communications link to connect industrial devices to a network and eliminate expensive hardwiring. It was designed to be a simple solution providing interchangeability of like components from different vendors. It is based on the Controller Area Network (CAN) originally developed by Bosch for the automotive market, and features fast response and high reliability for demanding applications.

DeviceNet is an open, i.e. non-proprietary, Application Layer Protocol (ISO Layer 7) network. Originally developed by Allen-Bradley and later opened to use by all vendors from the ODVA (Open DeviceNet Vendors Association), the DeviceNet communication link offers a high level of interchangeability and interoperability between devices from multiple vendors. These include devices such as limit switches, sensors, valve manifolds, motor starters, panel displays, etc.

Features

- Network size: Up to 64 nodes
- Network length: Up to 500 meters (varies with speed)
- Bus topology: Linear; power and signal are on the same network cable
- Bus addressing: Peer-to-Peer, with Multi-Cast, Multi-Master and Master/Slave
- System: Capability to remove and replace devices from the network under power

Compatible with Allen-Bradley Programmable Controllers:

Allen Bradley SLC-500 and PLC-5 families connect to Festo's DeviceNet interface via 1747-SDN and 1771-SDN DeviceNet scanner cards. The DeviceNet interface is configured via Allen-Bradley DeviceNet Manager Software.

Allen-Bradley SLC-500 and PLC5 are registered trademarks of Allen-Bradley Company.

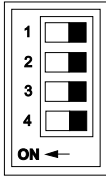
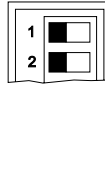
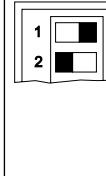
Festo Valve/Sensor Manifold Quick Start Settings

- Set switches by removing the cover on the Festo slave node:
 - Rotary switch for MAC ID (Media Access Control Identifier)
 - DIP for baud rate
- Supply 24V DC main power for electronics, sensors, and solenoids. See Festo manual for connector type and pin assignments.
- Connect DeviceNet micro connector
- Calculate number of I/O bytes as described in the Festo user manual.
- Configure software per PLC vendor instructions. See also Festo CD ROM, P/N 384676 for utilities for EDS files, or www.festo-usa.com.

Baud Rates

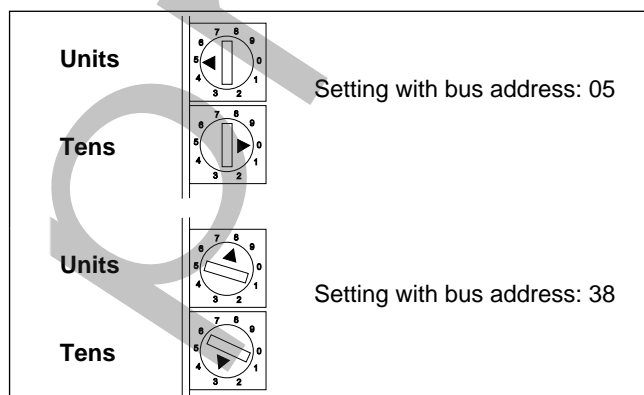
Baud Rate	Distance	Max. Drop Length	Cumulative Drop Length
125k	1,640 ft / 500 m	20 ft / 6 m	512 ft / 156 m
250k	820 ft / 250 m	20 ft / 6 m	256 ft / 78 m
500k	328 ft / 100 m	20 ft / 6 m	128 ft / 39 m

On Festo slave valve manifold systems the baud rate is set by dip switches as shown below. On the SF60 Smart Valve Manifold, the baud rate is set via software.

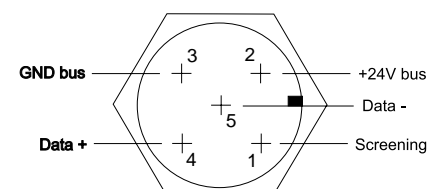
Allen-Bradley DeviceNet	Baud Rate 125k	250k	500k
DIP switch settings			

Mac ID

The Mac ID is set using the rotary switches as shown in the example below.

**DeviceNet Micro Connector Pin Assignments (5-pin Connector)**

- Pin 1 - screen
- Pin 2 - red
- Pin 3 - black
- Pin 4 - white
- Pin 5 - blue



CPV Valve Manifolds

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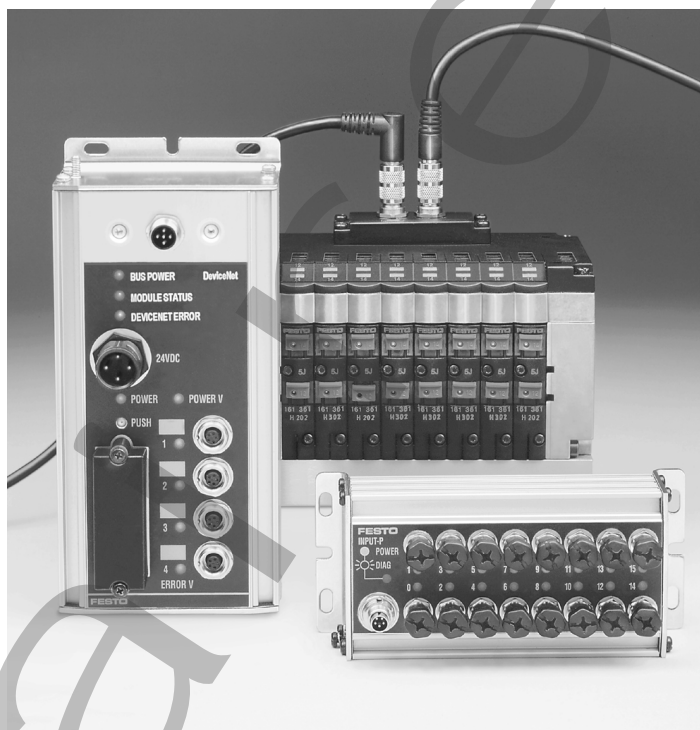
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"Compact Performance" Type 10 Pneumatic Valve Manifolds combine a totally modular manifold design and decentralized fieldbus networking capability to provide optimum control system flexibility.

■ Decentralized Control Flexibility

Position valves and sensor I/O's close to devices and actuators

■ DeviceNet™ Compatible

Using modern, double-sided surface mount technology and no trouble-prone discrete wiring

■ IP 65 rated

■ High Performance

Flow rates: 10 mm Manifold: 0.4 Cv / 400 l/min
14 mm Manifold: 0.8 Cv / 800 l/min
18 mm Manifold: 1.6 Cv / 1600 l/min

■ Compact Size

Valves available in 10, 14, and 18 mm widths

■ Modular Plug-in Design

Allows easy expansion or modification

■ Manifolds Only Sold Factory Assembled and Tested

Saves installation time, labor and cost

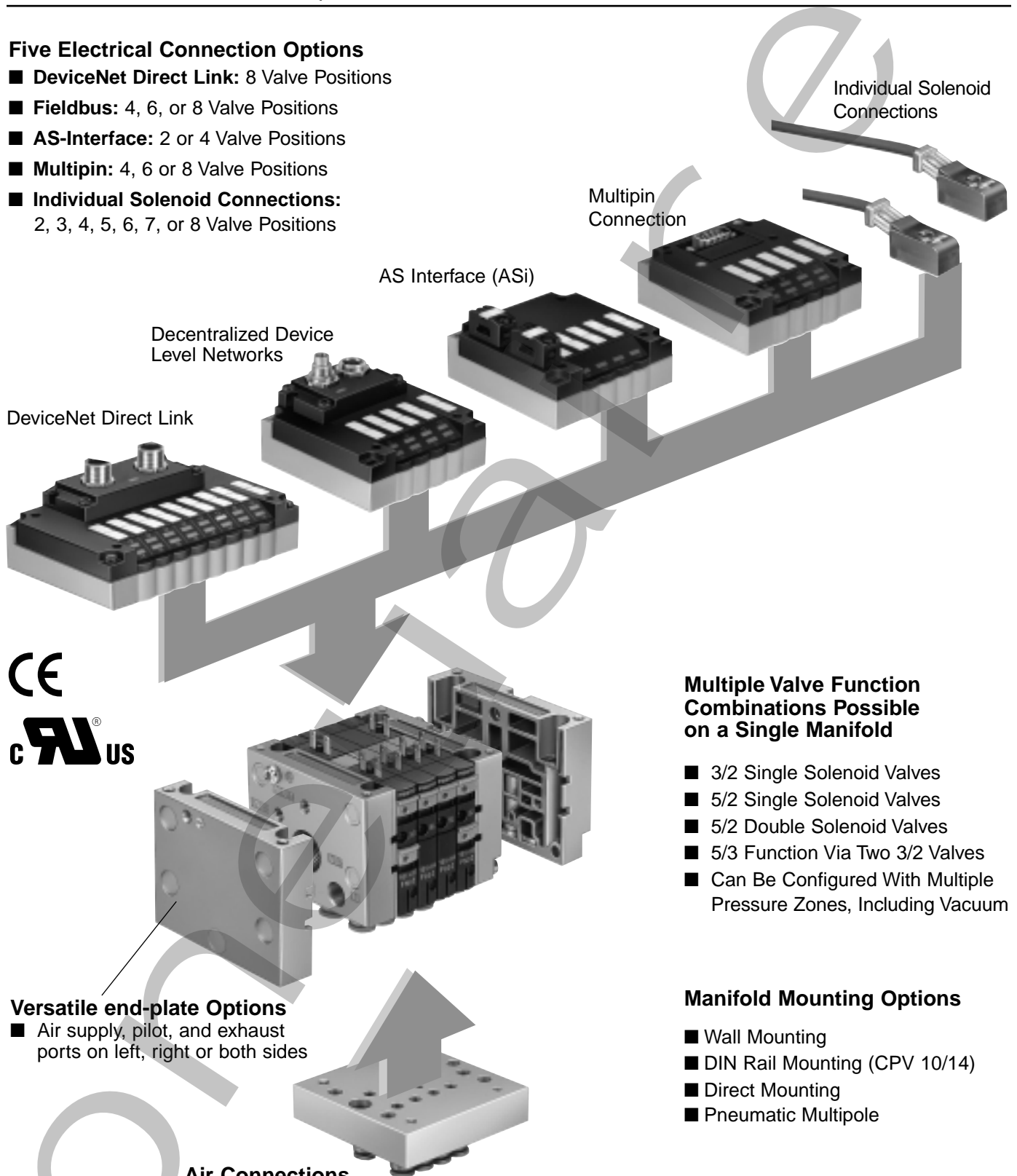
CPV Valve Manifolds

Modular Valve Manifold Concept

FESTO

Five Electrical Connection Options

- **DeviceNet Direct Link:** 8 Valve Positions
- **Fieldbus:** 4, 6, or 8 Valve Positions
- **AS-Interface:** 2 or 4 Valve Positions
- **Multipin:** 4, 6 or 8 Valve Positions
- **Individual Solenoid Connections:** 2, 3, 4, 5, 6, 7, or 8 Valve Positions



Multiple Valve Function Combinations Possible on a Single Manifold

- 3/2 Single Solenoid Valves
- 5/2 Single Solenoid Valves
- 5/2 Double Solenoid Valves
- 5/3 Function Via Two 3/2 Valves
- Can Be Configured With Multiple Pressure Zones, Including Vacuum

Manifold Mounting Options

- Wall Mounting
- DIN Rail Mounting (CPV 10/14)
- Direct Mounting
- Pneumatic Multipole

Accessories

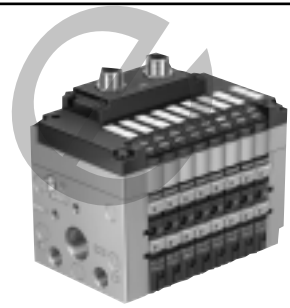
- Inch and Metric Quick Star Push-pull Fittings
- Silencers
- Solenoid Connectors and Cables

CPV Valve Manifolds

Manifold Designs, Type 10

DeviceNet™ Direct Link*

The valve manifold, Type CPV-GE-DN-8 is available with eight valve positions. Valve manifolds with DeviceNet Direct Link are available with 10, 14 and 18 mm valves, in any combination. The DeviceNet compliant electronics are implemented using modern, double-sided surface mount technology for reliable operation. No trouble-prone discrete wiring is used. Operating power is derived from the DeviceNet bus. The full DeviceNet permissible range (11-28V DC) is supported. Solenoids are powered by a separate connector, enabling E-stop functions and applying less burden to the DeviceNet Network.



Decentralized Device Level Networks

The valve manifold, Type CPV-VI-FB-..., available with four, six, or eight valve positions, has plug-in electrical connections for integrating the manifold into fieldbus networks via twisted wire cable to a separate fieldbus node. A second plug-in connection is provided for connecting a separate electrical input/output module in series. Electrical power and control signals are transmitted over the twisted wire cable. Up to four branches with a max. of 16 inputs and 16 outputs each can be connected to one fieldbus node, Type FB..., depending on the fieldbus protocol selected. A pneumatic multipole plate is also available.



AS Interface

The valve manifold, Type CPV-VI-AS (AZ)-..., available with two or four valve positions (ASi module with 4I and 4O also available), has plug-in electrical connections for integrating the manifold into ASi (Actuator-Sensor-Interface) networks via a specially-contoured, two-wire yellow cable, which transmits both 24V DC power and the control signals. The profiled cable can be mounted only one way, preventing incorrect polarity. For applications requiring separate power to the solenoids, an additional (black) profiled cable is available. Each ASi manifold is assigned four output locations, permitting connection of up to four single-solenoid 5/2 valves or two double solenoid valves per manifold. A pneumatic multipole plate is available.



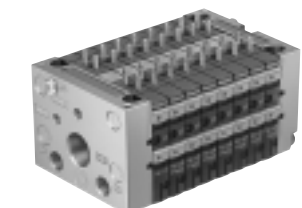
Multi-pin Connection

The valve manifold, Type CPV-VI-MP-..., available with four, six, or eight valve positions, has a plug-in multipin electrical connection in the cover cap. When used in conjunction with the Festo cable and plug assembly, the manifold is IP65 rated. Both NPN and PNP output devices can be used. Installation is simplified by one integrated cable 24V DC to the manifold. The manifold cover cap also contains LED status indicators and protective circuitry for the valves. A pneumatic multipole plate is also available.

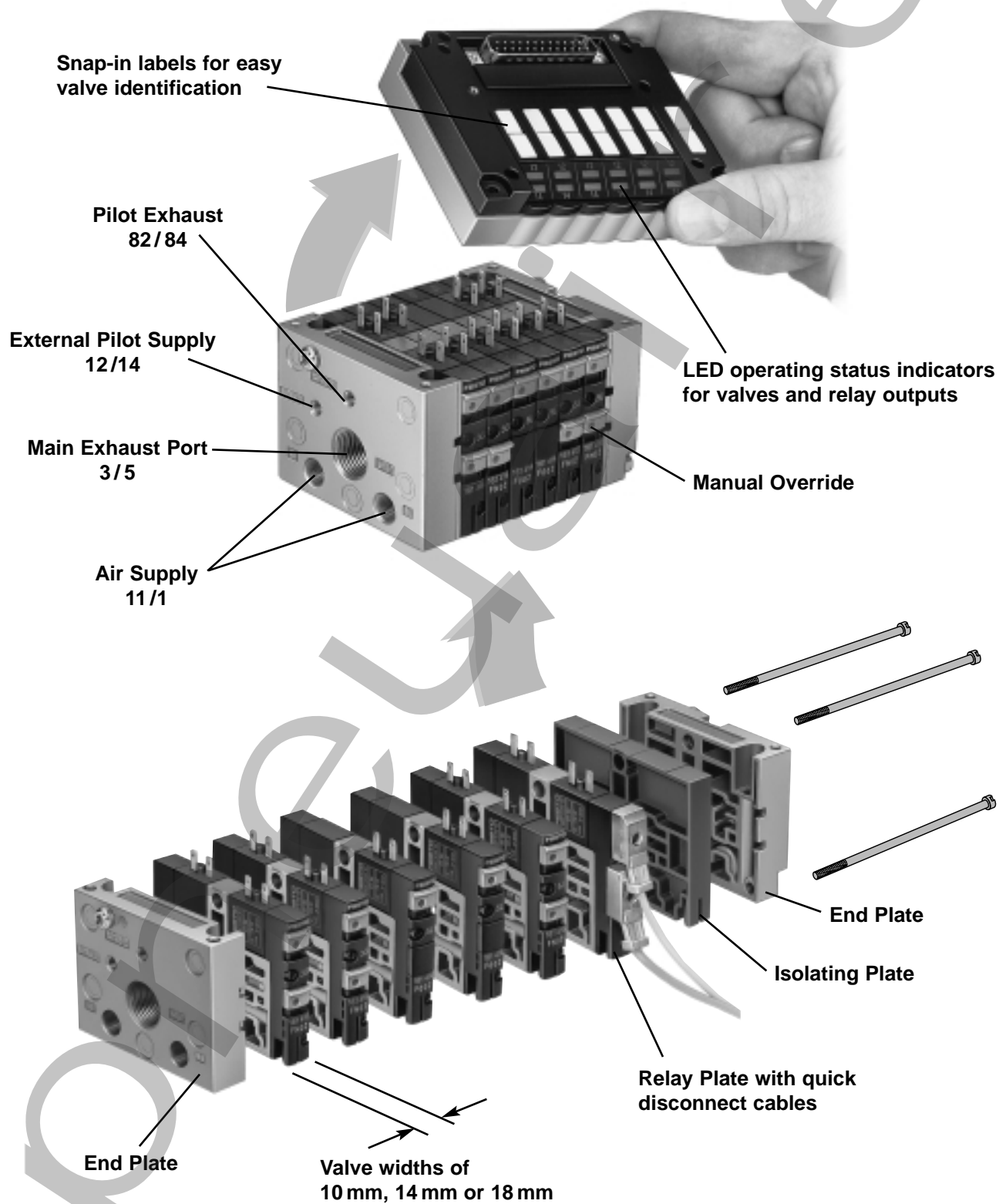


Individual Connection

The valve manifold, Type CPV-VI-IC-..., available with two to eight valve positions, enables each valve to be individually connected via a separate cable. Valves and cables are not polarity specific. The cable plug contains a LED status indicator and circuitry to protect against any possible overvoltages. A pneumatic multipole plate is also available.



* Also available for Profibus DP (12M baud), Contact Festo.



CPV Valve Manifolds

Manifold Components / Accessories

The modular, plug in design lets you configure up to 16 valve coils per manifold, in combinations of 3/2, 5/2, and 5/3-way valves. Relay plates, isolating plates, and end plates can be added as needed.

Valves - Codes M, J, N, C, H, G

Compact size, high performance

- 10 mm = 0.4 Cv / 400 l/min
- 14 mm = 0.8 Cv / 800 l/min
- 18 mm = 1.6 Cv / 1600 l/min

Multiple valve function combinations possible on a single manifold:

- 3/2 and 5/2 Single Solenoid Valves
- 5/2 Double Solenoid Valves
- 5/3 Function via Dual 3/2 Valves

Relay Plates - Code R

A relay plate with two separate normally-open dry contacts can be inserted in place of a valve in order to provide a signal to other control systems, or to control external electrical circuits. For 10 and 14 mm manifolds. (For fieldbus only. Not for IC, MP or ASi manifolds.)

Isolating Plates - Code T (Ports 1/11 closed)

Code S (Ports 1/11, 3/5 closed)

The isolating plate blocks the supply air path in the manifold, allowing two air supply connections. This enables the use of varying pressure ranges, including vacuum.

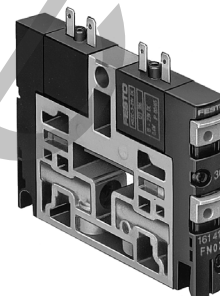
End Plates - Code U, V, W, X, Y, Z

Air pressure is supplied by way of the left, right, or both end plates. Available with internal and external pilot supplies.

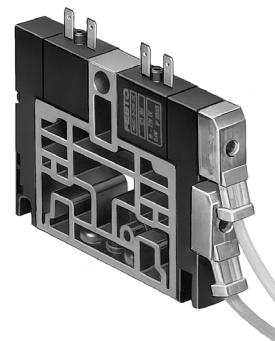
Blank Position Plates - Code L

For Manifolds with 10, 14 and 18 mm valves. A blanking plate can be installed to reserve space for future expansion of the valve manifold. The plate can be removed and a valve, relay or isolating plate can be installed in its place.

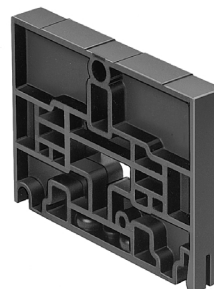
Valves



Relay Plates



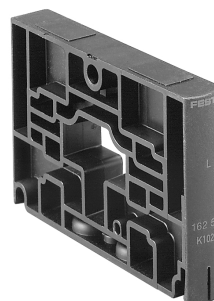
Isolating Plates



End Plates



Blank Position Plates



CPV Valve Manifolds

Manifold Accessories

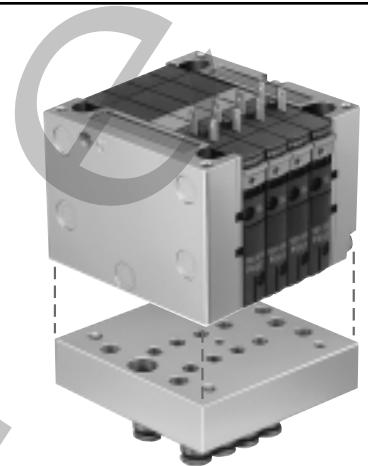
FESTO

Pneumatic Multipole - Codes M, P, A

A pneumatic multipole plate is available which contains all pneumatic connections on one removable plate that mounts to the bottom of the manifold, simplifying installation and maintenance. The ports on the multipole plate are threaded and can be fitted with Quick Star push-pull fittings for use with inch or metric tubing.

Can be ordered with fittings and silencers factory assembled (Code A).

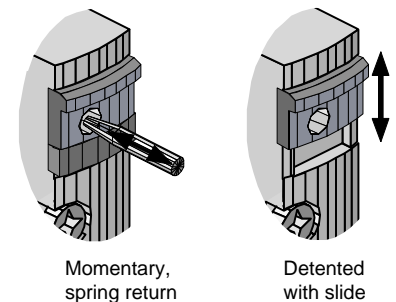
See page 63 for pneumatic multipole.



Manual Override - Codes N, R

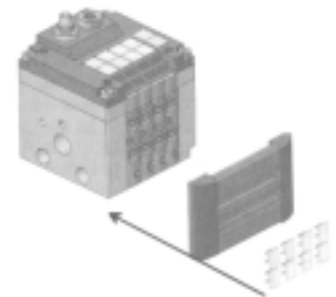
Two types of manual override are available:

- Momentary, spring return
- Detented with slide



Valve Identification Label Holder - Code Z

Valves can be easily identified using clip-on labels which mount either on the top of the manifold, or via a label holder (Code Z), which mounts on the front of the manifold. The labels (type IBS-...) are ordered separately. See order form for part numbers.



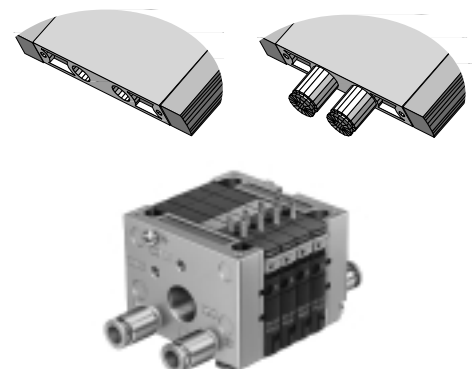
Quick Star Push-Pull Fittings

All ports on the manifold can be fitted with Quick Star push-pull fittings. Silencers are available for the exhaust ports.

Preassembled at factory (Code A) or order separately.

See page 173-174 for fittings.

See page 176-178 for silencers.



CPV Valve Manifolds

Valve Manifold Specifications, Type 10

CPV Valve Manifolds

The Festo Type 10 Valve Manifold is available in 10, 14 and 18 mm sizes. The manifolds are sold factory pre-assembled to your custom configuration, saving you on installation time, labor and cost.

All valve manifolds except those with individual connectors, are provided with LED status indicators and protective circuitry.

Valves are pneumatically piloted. Air pressure can enter through the left, right or both endplates. A pneumatic multipole plate is available which enables all pneumatic connections to be made on one removable plate on the bottom of the manifold.

Five Available Electrical Configuration Options

- DeviceNet Direct Link (8 valve positions)
- Decentralized Device Level Networks, "Fieldbus" (4, 6, or 8 valve positions)
- AS-Interface (2 or 4 valve positions)
- Multipin (4, 6, or 8 valve positions)
- Single solenoid connections (2 to 8 valve positions)



For Manifold Ordering see pages 71-83.
General Manifold Dimensions, see page 60.

The following valve functions are available:

- 3/2 Single Solenoid Valves
- 5/2 Single Solenoid Valves
- 5/2 Double Solenoid Valves
- 5/3 Function Via Two 3/2 Valves
- 5/3 Double Solenoid Valves

Manual Override Options:

- Detented with slide
- Momentary, spring return

Manifold Type		CPV-10-VI-... (Micro)	CPV-14-VI-... (Mini)	CPV-18-... (Midi)
Medium		Filtered, lubricated or unlubricated compressed air		
Design (valve)		Spool valve		
Type of Mounting		Direct, rear wall mounting, or on H-rails per DIN EN 50022		
Connection	Valve Manifold	1, 11: G1/8 12, 14: M5 2, 4: M7 3, 5: G3/8 82, 84: M5	1, 11: G1/4 12, 14: G1/8 2, 4: G 1/8 3, 5: G1/2 82, 84: G1/8	1, 11: G3/8 12, 14: G1/4 2, 4: G 1/4 3, 5: G1/2 82, 84: G1/4
	Valve	4, 2: M7	4, 2: G1/8	4, 2: G1/4
Medium Temperature		23 to 122°F / –5 to +50°C		
Operating Voltage		24V DC ±10%		
Power Consumption per Coil		<0.5 W	<0.75 W	<1.6 W
Protection System per DIN 40050		IP 65 (For all types of transmission in assembled state.)		

Technical Data for Solenoid Valves

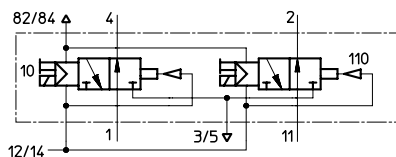
Valves	CPV10-M1H-3	CPV10-M1H-5L	CPV10-M1H-5J	CPV14-M1H-3	CPV14-M1H-5L	CPV14-M1H-5J	CPV18-M1H-3	CPV18-M1H-5L	CPV18-M1H-5J	CPV18-M1H-5/3G
Orifice	0.16 in / 4 mm			0.24 in / 6 mm			0.31 in / 8 mm			
Cv Factor	0.4 Cv / 400 l/min			0.80 Cv / 800 l/min			1.6 Cv / 1600 l/min			
Pressure Range (Internal Pilot)	45 to 120 psi / 3 to 8 bar									
Pressure Range (External Pilot)	26.6 in Hg to 150 psi / -0.9 to +10 bar									
Pressure of External Pilot	45 to 120 psi / 3 to 8 bar									
Response Time On/Off	17/25 ms	17/27 ms	—	24/30 ms	25/30 ms	—	17/20 ms	18/23 ms	—	13/35 ms
Switching Time	—	—	10 ms	—	—	12 ms	—	—	12 ms	—

CPV Valve Manifolds are available with the following valves:

Code: N

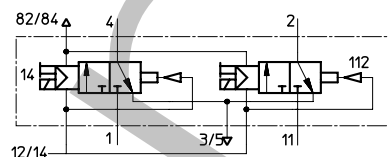
CPV...-M1H-2x3OLS-...

2 x 3/2-Way Valve, Normally Open

**Code: C**

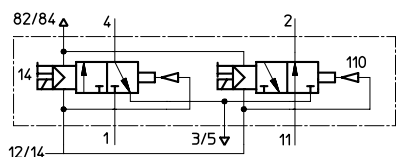
CPV...-M1H-2x3GLS-...

2 x 3/2-Way Valve, Normally Closed

**Code: H**

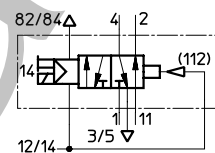
CPV...-M1H-3OLS-3GLS-...

2 x 3/2-Way Valve Each, Normally Open and Closed

**Code: M**

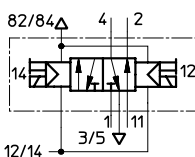
CPV...-M1H-5LS-...

Single solenoid 5/2-way valve

**Code: J**

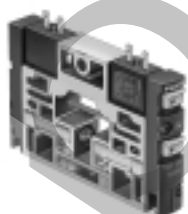
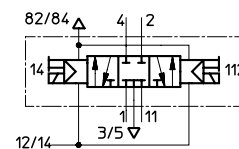
CPV...-M1H-5JS-...

Double solenoid 5/2-way valve

**Code: G**

CPV...-M1H-5/3G-...

Double solenoid 5/3-way valve

**10 mm Valves**

• 0.4 Cv / 400 l/min

**14 mm Valves**

• 0.85 Cv / 850 l/min

**18 mm Valves**

• 1.4 to 2.1 Cv / 1400 to 2100 l/min

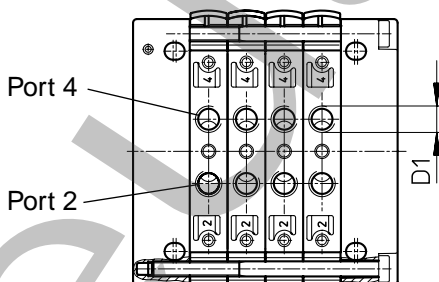
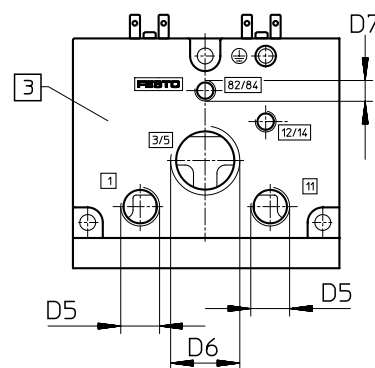
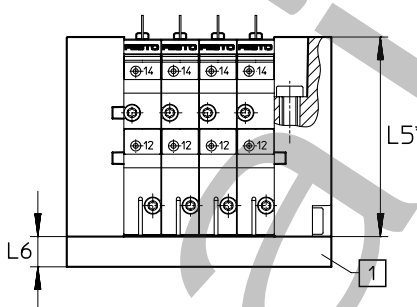
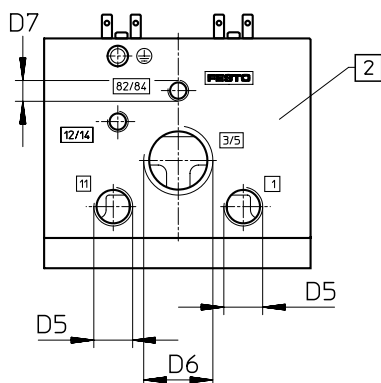
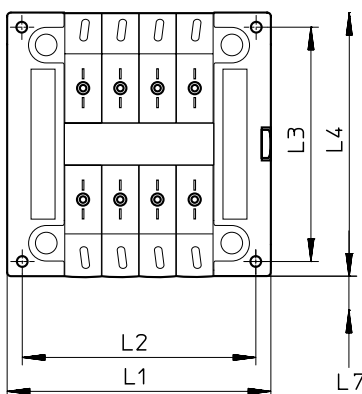
CPV Valve Manifolds

General Manifold Dimensions

See the following pages for additional dimensions and ordering.

Valve Manifolds

Individual Connections	72
Multipin Interface	74
AS-Interface	76
DeviceNet Direct Link.....	78
Fieldbus Interface.....	80



- 1 Pneumatic multipole plate
- 2 Left endplate
- 3 Right endplate

* Note: 5/3 valves (Code G) for 10 and 14 mm manifolds have a sub-base extension which increases the height of the valve (dim. L5). This extension mounts directly to the bottom of the valve or beneath the pneumatic multipole. The added height for the extension is:
 CPV 10: add 0.866 in / 22 mm
 CPV 14: add 1.102 in / 28 mm

	Micro Valve Manifold (10 mm) CPV-10-...-VI-IC-...				Mini Valve Manifold (14 mm) CPV-14-...-VI-IC-...				Midi Valve Manifold (18 mm) CPV-18-...-VI-IC-...			
	2 valve positions in / mm	4 valve positions in / mm	6 valve positions in / mm	8 valve positions in / mm	2 valve positions in / mm	4 valve positions in / mm	6 valve positions in / mm	8 valve positions in / mm	2 valve positions in / mm	4 valve positions in / mm	6 valve positions in / mm	8 valve positions in / mm
L1	1.97 / 50	2.76 / 70	3.54 / 90	4.33 / 110	2.68 / 68	3.78 / 96	4.88 / 124	5.98 / 152	3.78 / 96	5.20 / 132	6.61 / 168	8.03 / 204
L2	1.65 / 41.8	2.43 / 61.8	3.22 / 81.8	4.01 / 101.8	2.28 / 58	3.39 / 86	4.49 / 114	5.59 / 142	3.37 / 85.5	4.78 / 121.5	6.20 / 157.5	7.62 / 193.5
L3	2.44 / 62				3.07 / 78				4.19 / 106.5			
L4	2.76 / 70				3.43 / 87.10				4.57 / 116.2			
L5*	2.08 / 52.8				2.31 / 58.80				2.87 / 73			
L6	0.59 / 15				0.79 / 20				0.79 / 20			
L7	0.37 / 9.5				0.37 / 9.5				0.37 / 9.5			
D1	M7				G1/8				G1/4			
D5	G1/8				G1/4				G3/8			
D6	G3/8				G1/2				G1/2			
D7	M5				G1/8				G1/4			

CPV Valve Manifolds

Relay Plates, Isolating Plates, and Blank Position Plates

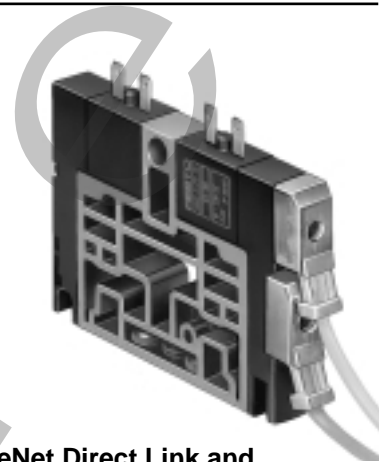
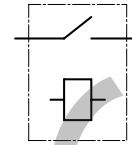
FESTO

Relay Plates - Code R

For fieldbus manifolds with 10 and 14 mm valves. A relay plate with two separate normally-open dry contacts can be inserted in place of a valve in order to provide a signal to other control systems, or to control external electrical circuits.

The relay plates allow the triggering of valves or other loads with high power consumption. The contacts are rated for 24V DC with a maximum current of 1.0 A.

Relay Plate



Available for 10 and 14 mm DeviceNet Direct Link and Fieldbus Valve Manifolds only. See pages 86-87 for cables.

Isolating Plates - Code T (Ports 1/11 closed) Code S (Ports 1/11, 3/5 closed)

For Manifolds with 10, 14 and 18 mm valves. The isolating plate blocks the supply air path in the manifold, allowing multiple air supply connections. This enables the use of varying pressure ranges, including vacuum.

Isolating Plate



Blank Position Plates - Code L

For Manifolds with 10, 14 and 18 mm valves. A blanking plate can be installed to reserve space for future expansion of the valve manifold. The plate can be removed and a valve, relay or isolating plate can be installed in its place.

Blank Position Plate



Refer to order form configuration (pages 72-81)
for how to include these plates in manifolds.

CPV Valve Manifolds

End Plates

End Plates

Air pressure is supplied by way of the left, right, or both end plates. External pilot air is necessary when the operating pressure is less than 45 psi / 3 bar.

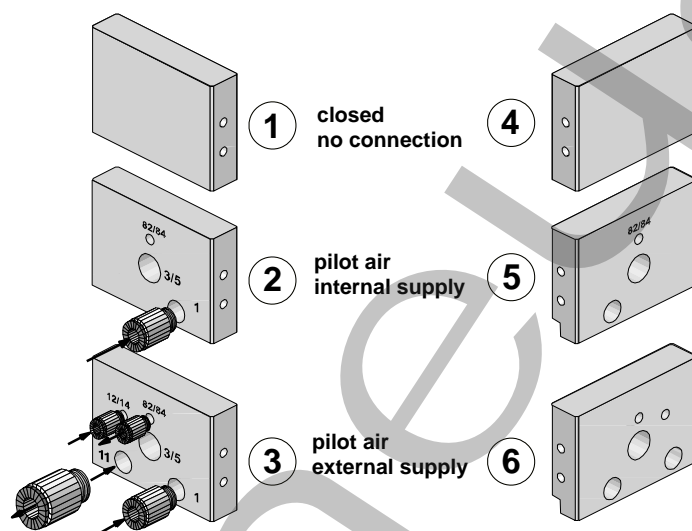
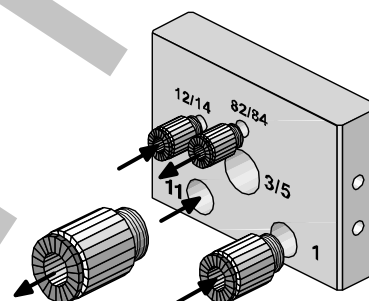
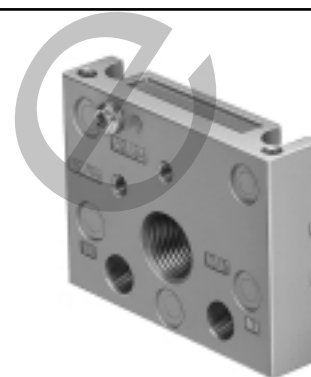
When supplying air to only one side, the other side should be an end plate without port connections. The decision between one or two-sided air supply depends on the air consumption of the actuators to be driven.

Note: If an isolating plate is used, then main air must be supplied from each end plate.

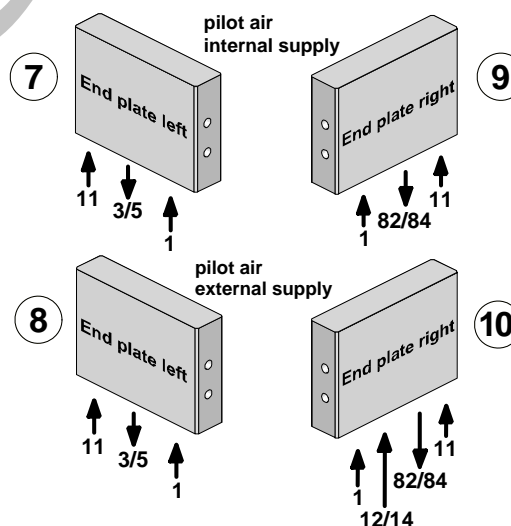
CPV 10 and 14: End plates for internal piloting have no external ports 12/14. Pilot air 12/14 is internally fed from the main supply and port 1.

CPV 18: All ports are present.

The exhaust ports, 3/5 and 82/84, can be fitted with Quick Star push-pull fittings, or silencers.



End Plates for Pneumatic Multipole



Code	Manifold Configuration Description	Illustrations End Plates
U	Internal pilot supply, right side only	① + ⑤
V	Internal pilot supply, left side only	② + ④
W	External pilot supply, right side only	① + ⑥
X	External pilot supply, left side only	③ + ④
Y	Internal pilot supply, both sides	③ + ⑤
Z	External pilot supply, both sides	③ + ⑥
For Pneumatic Multipole		
-	Internal pilot supply, both sides	⑦ + ⑨
-	External pilot supply, both sides	⑧ + ⑩

Port Connections for End Plates

Port	CPV-10-... (Micro)	CPV-14-... (Mini)	CPV-18-... (Midi)
Supply ports (1 and 11)	G1/8	G1/4	G3/8
External pilots (12 and 14)	M5	G1/8	G1/4
Working ports (2 and 4)	M7	G1/8	G1/4
Exhaust (3 and 5)	G3/8	G1/2	G1/2
Pilot Exhaust (82 and 84)	M5	G1/8	G1/4

Pneumatic Multipole Plates Codes M, P

Pneumatic multipole sub-base plates are available for CPV 10, 14, and 18 mm manifolds. The sub-base plates enable all pneumatic connections to be made on one removable plate on the bottom of the valve manifold, thereby simplifying installation and maintenance.

The pneumatic multipole sub-base plates have threaded ports which allow the use of Quick Star push-pull fittings for inch or metric tubing.

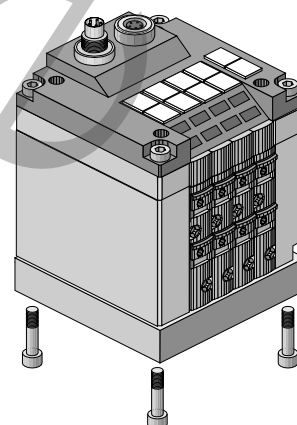
Multipole sub-base plates are available in two designs:

Flush-mounting (Code M)

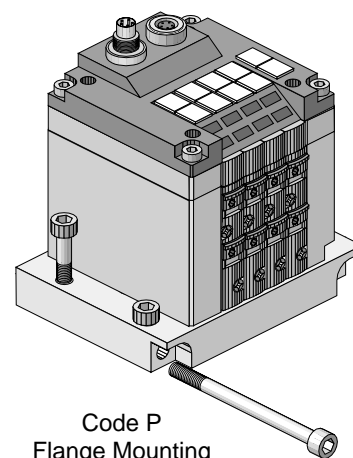
The sub-base fits flush with the valve manifold, for tight-space applications. (Pages 64-66)

Flange mounting (Code P)

The sub-base surface extends beyond the manifold on two sides, providing a simple means of mounting via through-holes on the top and sides of the multipole sub-base. (Pages 67-69)



Code M
Flush-mounting



Code P
Flange Mounting

Port Connections for Pneumatic Multipole

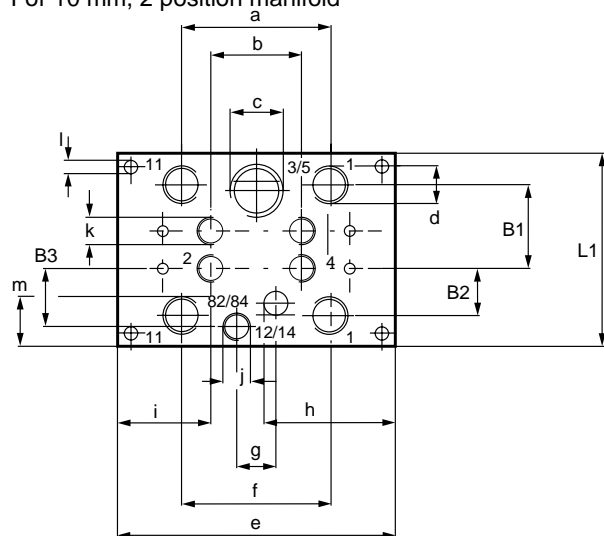
Port	CPV-10-...		CPV-14-...		CPV-18-...	
	Code M	Code P	Code M	Code P	Code M	Code P
Supply ports (1 and 11)	G 1/8	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8
External pilots (12 and 14)	M7	M5	G 1/8	G 1/8	G 1/4	G 1/4
Working ports (2 and 4)	M7	M7	G 1/8	G 1/8	G 1/4	G 1/4
Exhaust (3 and 5)	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2	G 1/2
Pilot Exhaust (82 and 84)	M7	M5	G 1/8	G 1/8	G 1/4	G 1/4

CPV Valve Manifolds

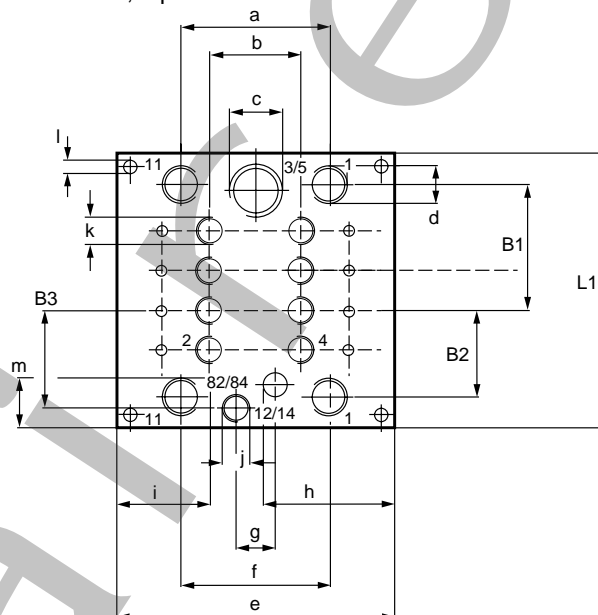
Dimensions for 10 mm Pneumatic Multipole, Code M (Flush-mounting)

Code M (Flush-mounting)

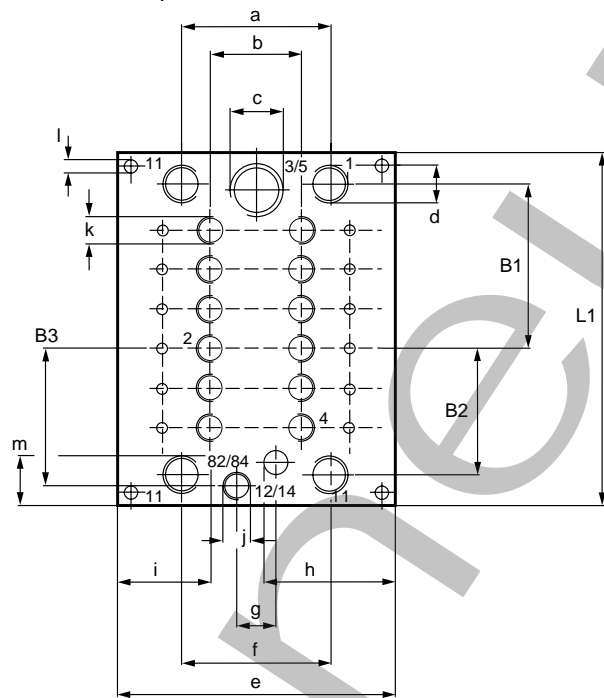
For 10 mm, 2 position manifold



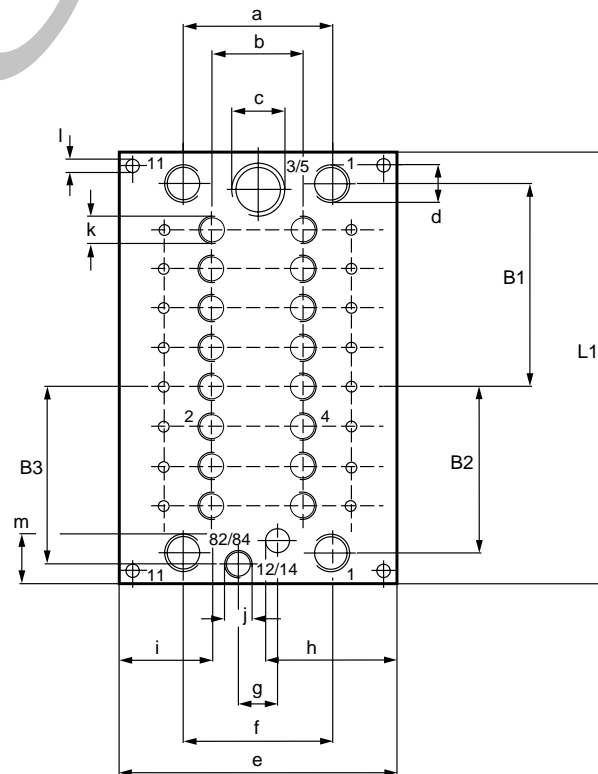
For 10 mm, 4 position manifold



For 10 mm, 6 position manifold



For 10 mm, 8 position manifold



For 10 mm Manifolds	B1 in / mm	B2 in / mm	B3 in / mm	L1 in / mm
2 position	0.86 / 21.9	0.57 / 14.4	0.47 / 12	1.95 / 49.5
4 position	1.26 / 31.9	0.86 / 21.9	0.96 / 24.4	2.74 / 69.5
6 position	1.65 / 41.9	1.26 / 31.9	1.35 / 34.4	3.52 / 89.5
8 position	2.04 / 51.9	1.65 / 41.9	1.75 / 44.4	4.31 / 109.5

Dimensions

a 1.46 in / 37.2 mm	g 0.39 in / 10 mm
b 0.91 in / 23 mm	h 1.30 in / 33 mm
c G 1/4	i 0.94 in / 24 mm
d G 1/8	j M7
e 2.76 in / 70 mm	k M7
f 1.46 in / 37.2 mm	l M4
	m 0.47 in / 12 mm

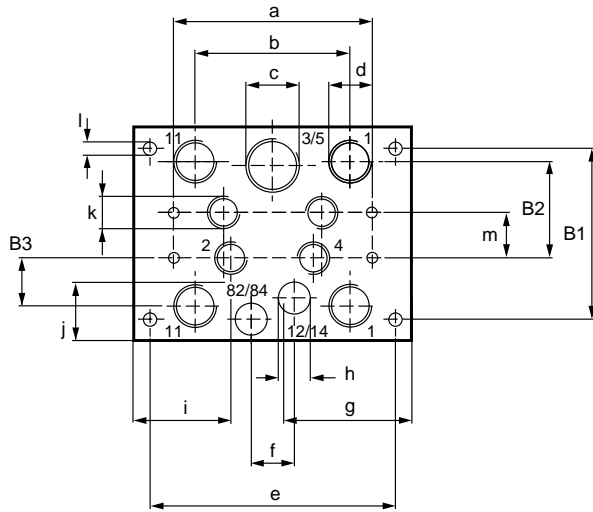
CPV Valve Manifolds

Dimensions for 14 mm Pneumatic Multipole, Code M (Flush-mounting)

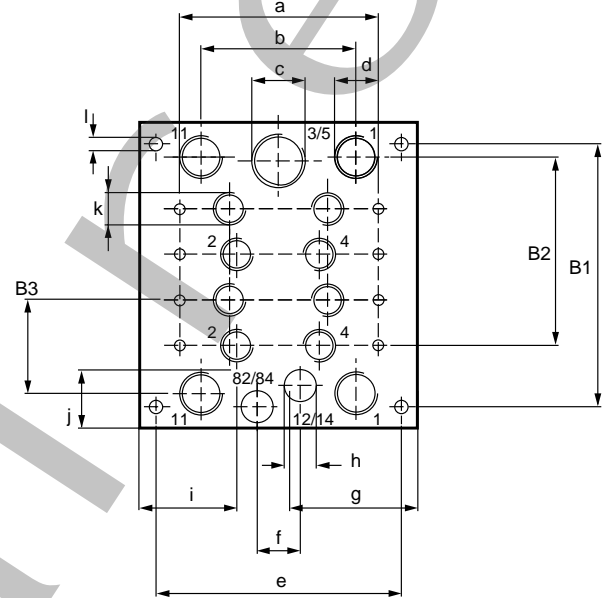
FESTO

Code M (Flush-mounting)

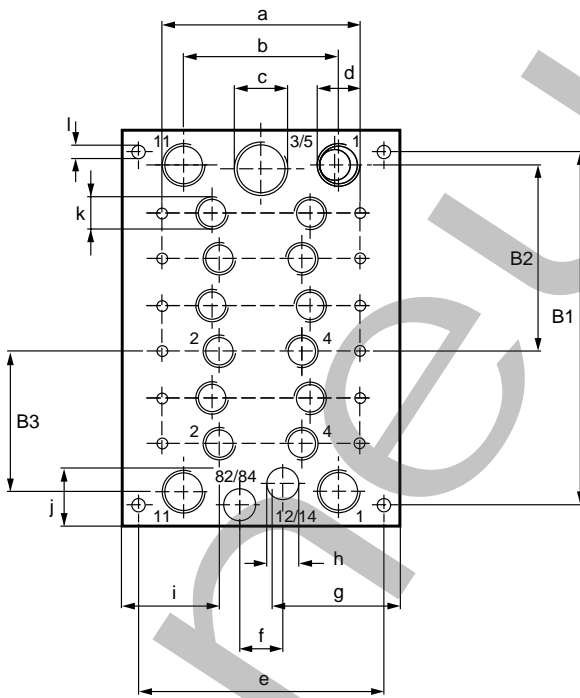
For 14 mm, 2 position manifold



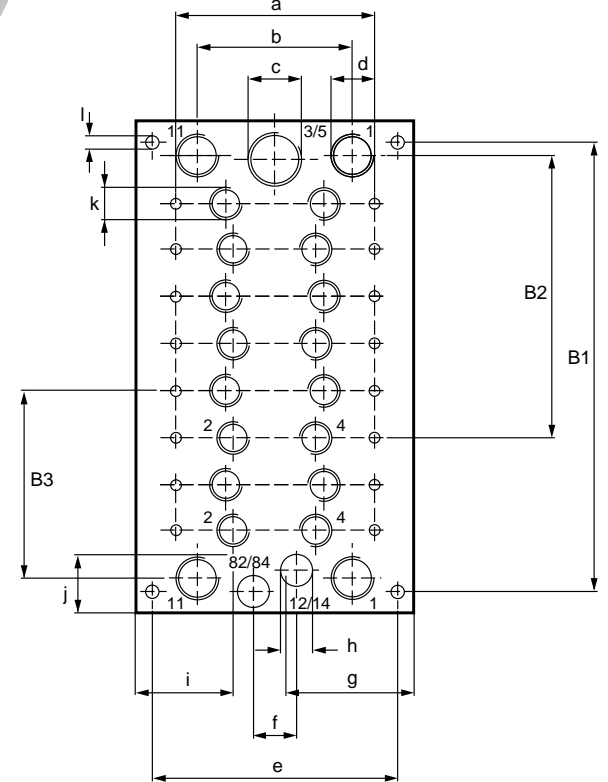
For 14 mm, 4 position manifold



For 14 mm, 6 position manifold



For 14 mm, 8 position manifold



For 14 mm Manifolds	B1 in / mm	B2 in / mm	B3 in / mm
2 position	2.11 / 53.5	1.20 / 30.5	0.65 / 16.5
4 position	3.21 / 81.5	1.75 / 44.5	1.20 / 30.5
6 position	4.31 / 109.5	2.30 / 58.5	1.75 / 44.5
8 position	5.41 / 137.5	2.85 / 72.5	2.30 / 58.5

Dimensions

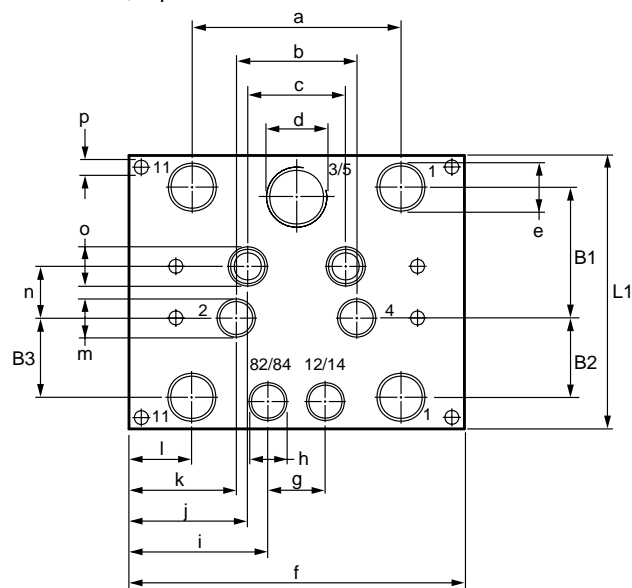
a 2.44 in / 62 mm	f 0.53 in / 13.5 mm	k G 1/8
b 1.89 in / 48 mm	g 1.57 in / 40 mm	l M4
c G 3/8	h G 1/8	m 0.55 in / 14 mm
d G 1/4	i 1.22 in / 31 mm	
e 3.02 in / 76.6 mm	j 0.71 in / 18 mm	

CPV Valve Manifolds

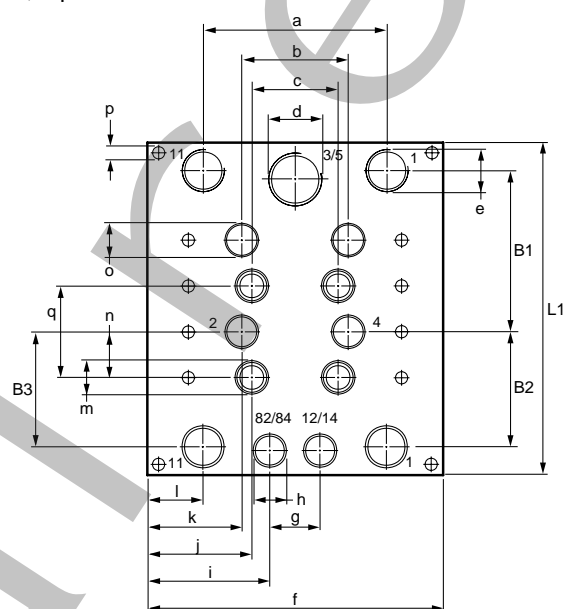
Dimensions for 18 mm Pneumatic Multipole, Code M (Flush-mounting)

Code M (Flush-mounting)

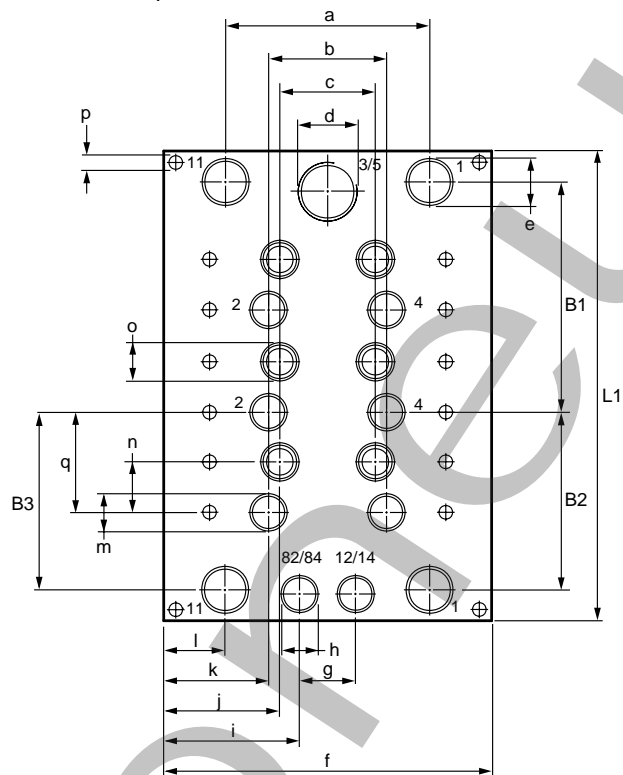
For 18 mm, 2 position manifold



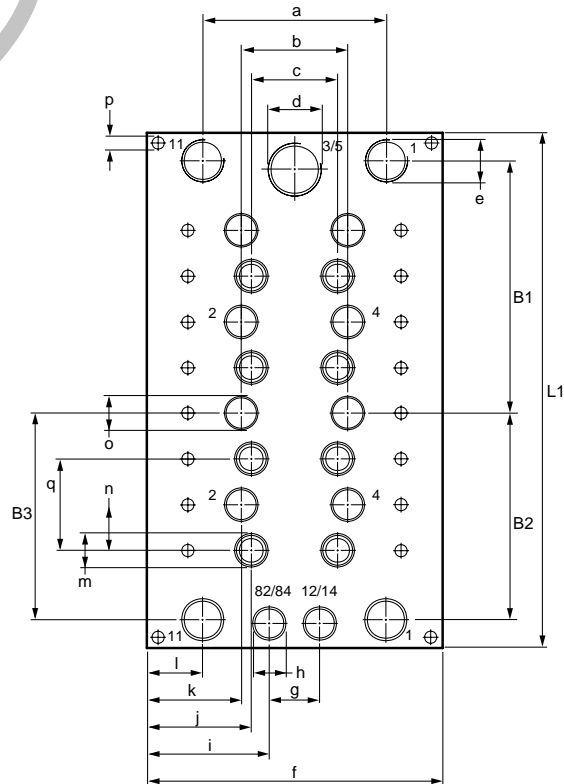
For 18 mm, 4 position manifold



For 18 mm, 6 position manifold



For 18 mm, 8 position manifold



For 18 mm Manifolds	B1 in / mm	B2 in / mm	B3 in / mm	L1 in / mm
2 position	1.80 / 45.6	1.08 / 27.5	1.14 / 29	3.74 / 95.1
4 position	2.50 / 63.5	1.79 / 45.5	1.85 / 47	5.16 / 131
6 position	3.21 / 81.5	2.50 / 63.5	2.56 / 65	6.57 / 167
8 position	3.92 / 99.5	3.21 / 81.5	3.27 / 83	7.99 / 203

Dimensions

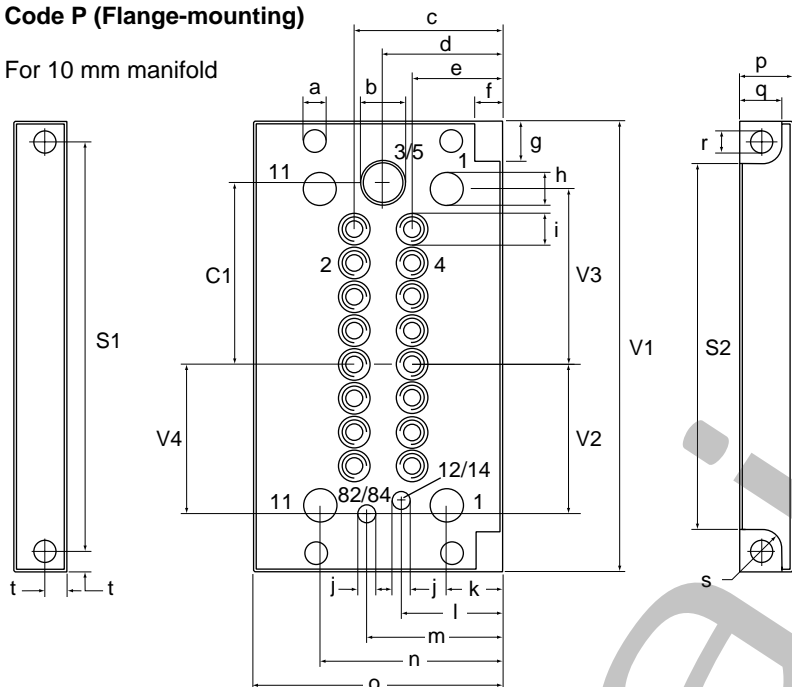
a 2.86 in / 72.6 mm	g 0.79 in / 20 mm	m G 1/4
b 1.65 in / 42 mm	h G 1/4	n 0.71 in / 18 mm
c 1.34 in / 34 mm	i 1.90 in / 48.3 mm	o G 1/4
d G 1/2	j 1.63 in / 41.3 mm	p M5
e G 3/8	k 1.97 in / 37.3 mm	q 1.42 in / 36 mm
f 4.59 in / 116.6 mm	l 0.87 in / 22 mm	

CPV Valve Manifolds

Dimensions for 10 mm Pneumatic Multipole, Code P (Flange-mounting)

Code P (Flange-mounting)

For 10 mm manifold



Dimensions

a	0.26 in / 6.5 mm	k	0.65 in / 16.4 mm
b	G 1/4	l	1.18 in / 30 mm
c	1.71 in / 43.5 mm	m	1.57 in / 40 mm
d	1.38 in / 35 mm	n	2.11 in / 53.6 mm
e	1.04 in / 26.5 mm	o	2.87 in / 73 mm
f	0.31 in / 8 mm	p	0.59 in / 15 mm
g	0.47 in / 12 mm	q	0.47 in / 12 mm
h	G 1/8	r	0.26 in / 6.5 mm
i	M7	s	0.24 in / 6 mm radius
j	M5	t	0.24 in / 6 mm

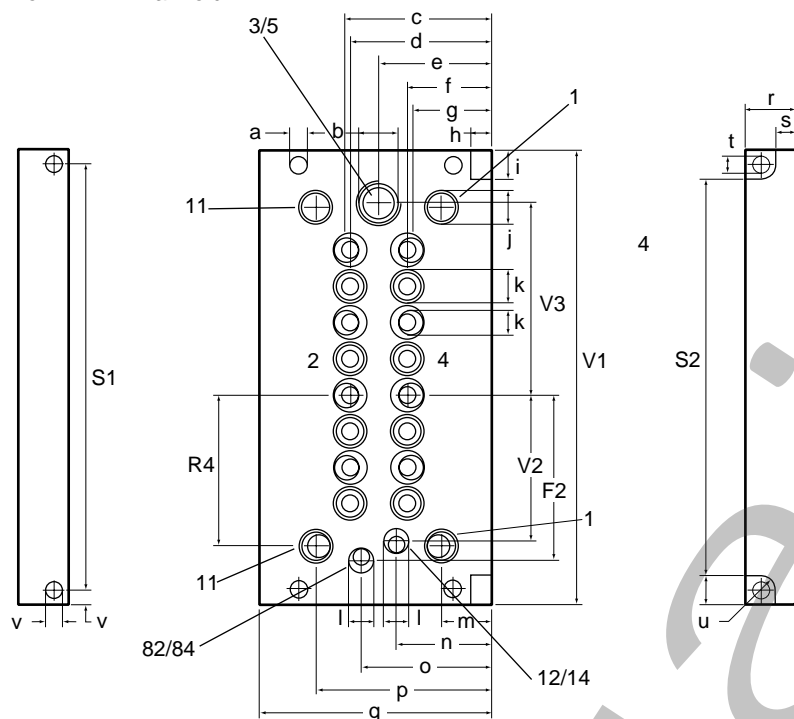
For 10 mm Manifolds	8 Position in / mm	6 Position in / mm	4 Position in / mm	2 Position in / mm
V1	5.26 / 134	4.49 / 114	3.70 / 94	2.91 / 74
V2	1.65 / 41.9	1.26 / 31.9	0.86 / 21.9	0.49 / 11.9
V3	2.04 / 51.9	1.65 / 41.9	1.26 / 31.9	0.86 / 21.9
V4	1.75 / 44.4	1.35 / 34.4	0.96 / 24.4	0.57 / 14.4
S1	4.80 / 122	4.02 / 102	3.23 / 82	2.44 / 62
S2	4.33 / 110	3.54 / 90	2.76 / 70	1.97 / 50
C1	2.11 / 53.7	1.72 / 43.7	1.32 / 33.7	0.93 / 23.7

CPV Valve Manifolds

Dimensions for 14 mm Pneumatic Multipole, Code P (Flange-mounting)

Code P (Flange-mounting)

For 14 mm manifold



Dimensions

a	0.26 in / 6.5 mm	l	G 1/8
b	G 3/8	m	0.76 in / 19.3 mm
c	2.22 in / 56.3 mm	n	0.14 in / 36.55 mm
d	2.14 in / 54.3 mm	o	1.99 in / 50.55 mm
e	1.70 in / 43.3 mm	p	2.95 in / 67.3 mm
f	1.27 in / 32.3 mm	q	3.50 in / 89 mm
g	1.19 in / 30.3 mm	r	0.79 in / 20 mm
h	0.31 in / 8 mm	s	0.47 in / 12 mm
i	0.47 in / 12 mm	t	0.26 in / 6.5 mm
j	G 1/4	u	0.24 in / 6 mm radius
k	G 1/8	v	0.24 in / 6 mm

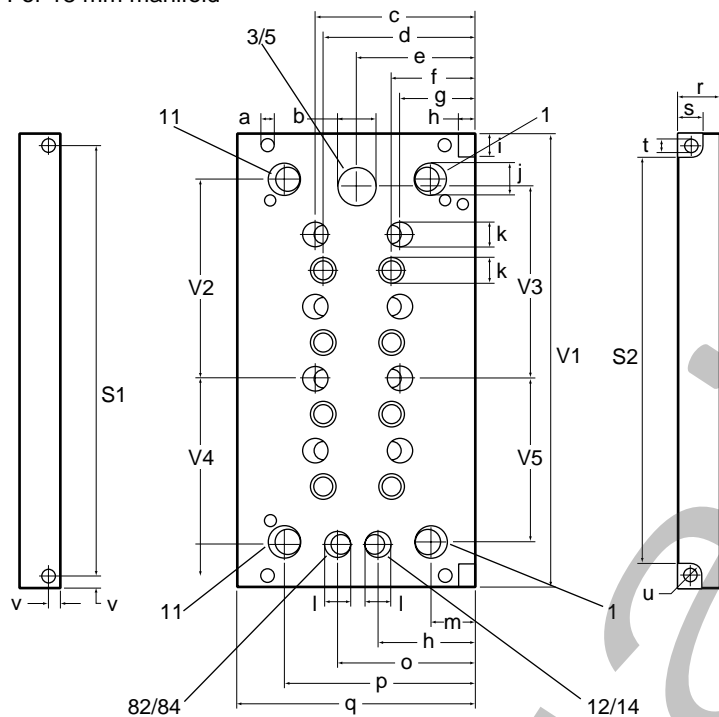
For 14 mm Manifolds	8 Position in / mm	6 Position in / mm	4 Position in / mm	2 Position in / mm
V1	6.93 / 176	5.83 / 148	4.72 / 120	3.62 / 92
V2	2.22 / 56.5	1.12 / 28.5	1.12 / 28.5	1.12 / 28.5
V3	2.91 / 74	2.91 / 74	1.81 / 46	0.71 / 18
F2	2.53 / 64.3	1.43 / 36.3	1.43 / 36.3	1.43 / 36.3
R4	2.30 / 58.5	1.20 / 30.5	1.20 / 30.5	1.20 / 30.5
S1	6.46 / 164	5.35 / 136	4.25 / 108	3.15 / 80
S2	5.98 / 152	4.88 / 124	3.78 / 96	2.68 / 68

CPV Valve Manifolds

Dimensions for 18 mm Pneumatic Multipole, Code P (Flange-mounting)

Code P (Flange-mounting)

For 18 mm manifold



Dimensions

a	0.26 in / 6.5 mm	l	G 1/4
b	G 1/2	m	0.87 in / 22 mm
c	3.12 in / 79.3 mm	n	1.90 in / 48.3 mm
d	2.96 in / 75.3 mm	o	2.69 in / 68.3 mm
e	2.29 in / 58.3 mm	p	3.72 in / 94.6 mm
f	1.63 in / 41.3 mm	q	4.64 in / 118 mm
g	1.47 in / 37.3 mm	r	0.79 in / 20 mm
h	0.31 in / 8 mm	s	0.47 in / 12 mm
i	0.47 in / 12 mm	t	0.26 in / 6.5 mm
j	G 3/8	u	0.24 in / 6 mm radius
k	G 1/4	v	0.24 in / 6 mm

For 18 mm Manifolds	8 Position in / mm	6 Position in / mm	4 Position in / mm	2 Position in / mm
V1	8.94 / 227	7.52 / 191	6.10 / 155	4.69 / 119
V2	3.92 / 99.5	3.21 / 81.5	2.50 / 63.5	1.79 / 45.5
V3	3.78 / 96	3.07 / 78	2.36 / 60	1.65 / 42
V4	3.27 / 83	2.56 / 65	1.85 / 47	1.14 / 29
V5	3.21 / 81.5	2.50 / 63.5	1.79 / 45.5	1.08 / 27.5
S1	8.46 / 215	7.05 / 179	5.63 / 143	4.21 / 107
S2	7.99 / 203	6.57 / 167	5.16 / 131	3.74 / 95

CPV Valve Manifolds

Mounting Options for 10 and 14 mm Manifolds

DIN Rail Mounting Bracket

Type CPV10/14-VI-BG-NRH-35

Part Number: 162556

Self-tapping mounting screws included.

DIN Rail

Type NRH-35-2000

Per DIN EN 50022

Part Number: 35430

Rear Wall Mounting Bracket

Type CPV10/14-VI-BG-RWL-B

Part Number: 189541

Self-tapping mounting screws included.

Type CPV10/14-VI-BG-NRH-35



Type CPV10/14-VI-BG-RWL-B

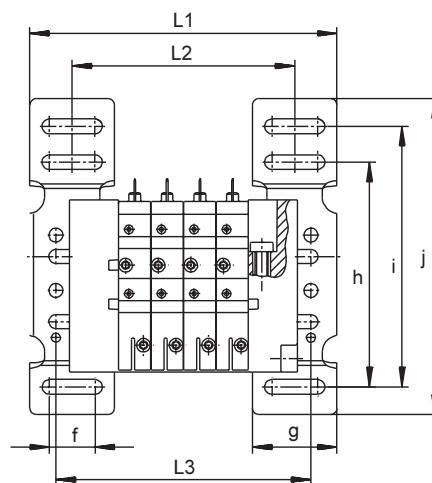
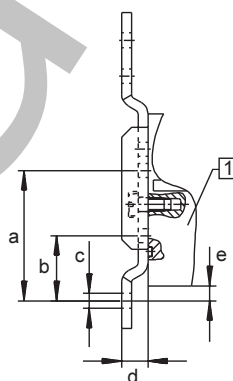
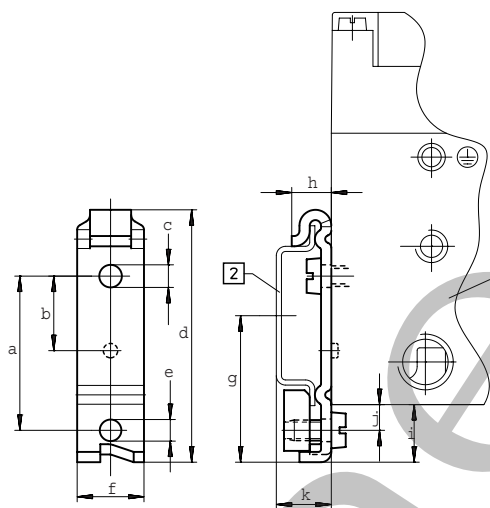


DIN Rail Mounting Bracket

Type CPV10/14-VI-BG-NRH-35

Rear Wall Mounting Bracket

Type CPV10/14-VI-BG-RWL-B



① Valve manifold, Type CPV

① Valve manifold, Type CPV

② DIN Rails, per DIN EN50022

③ Mounting holes can only be used with Type CPV14

Dimensions

a 1.18 in / 30 mm	g 1.12 in / 28.5 mm
b 0.57 in / 14.5 mm	h 0.30 in / 7.7 mm
c 0.17 in / 4.4 mm	i 0.44 in / 11.2 mm
d 1.93 in / 49.1 mm	j 0.20 in / 5 mm
e 0.17 in / 4.2 mm	k 0.42 in / 10.7 mm
f 0.51 in / 13 mm	

Dimensions

a 1.57 in / 40 mm	f 0.55 in / 14 mm
b 0.78 in / 20 mm	g 1.02 in / 26 mm
c 0.18 in / 4.5 mm	h 2.72 in / 69 mm
d 0.31 in / 8 mm	i 3.14 in / 80 mm
e 0.18 in / 4.6 mm	j 3.81 in / 97 mm

	CPV10 (with valve positions) in / mm				CPV14 (with valve positions) in / mm			
	2-valves	4-valves	6-valves	8-valves	2-valves	4-valves	5-valves	8-valves
L1	2.91 / 74	3.70 / 94	4.48 / 114	5.27 / 134	3.54 / 90	4.46 / 118	5.75 / 146	6.85 / 174
L2	1.88 / 48	2.67 / 68	3.46 / 88	4.25 / 108	2.51 / 64	3.62 / 92	4.72 / 120	5.83 / 148
L3	2.67 / 68	3.46 / 88	4.25 / 108	5.03 / 128	2.91 / 74	4.02 / 102	5.12 / 130	6.22 / 158

CPV Valve Manifolds

Mounting Options for 18 mm Manifolds

FESTO

Rear Wall Mounting Bracket

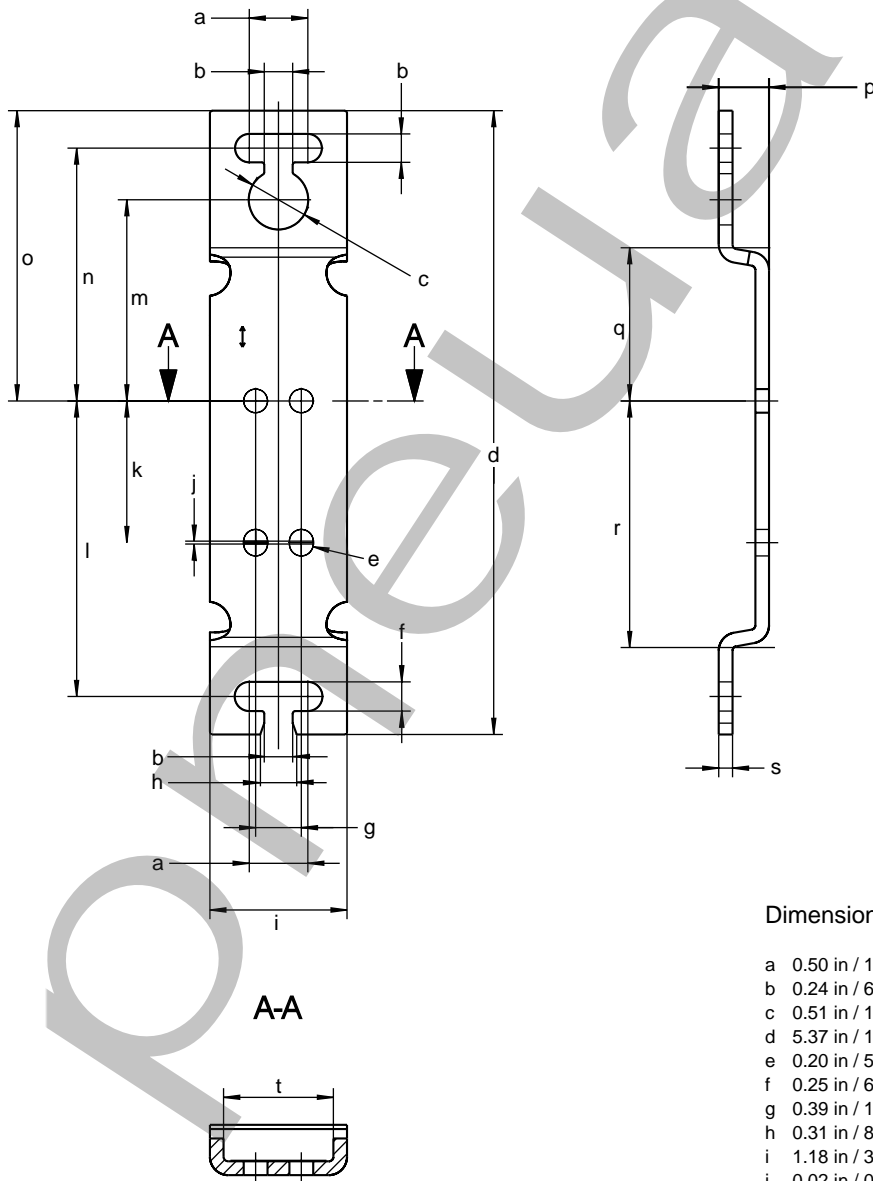
Type CPV18-VI-BG-RW

Part Number: 163292

Self-tapping mounting screws included.

Rear Wall Mounting Bracket

Type CPV18-VI-BG-RW



Dimensions

a	0.50 in / 12.8 mm	k	1.22 in / 31 mm
b	0.24 in / 6.2 mm	l	2.55 in / 64.7 mm
c	0.51 in / 13 mm	m	1.73 in / 44 mm
d	5.37 in / 136.5 mm	n	2.18 in / 55.3 mm
e	0.20 in / 5.2 mm	o	2.50 in / 63.5 mm
f	0.25 in / 6.4 mm	p	0.43 in / 11 mm
g	0.39 in / 10 mm	q	1.32 in / 33.5 mm
h	0.31 in / 8 mm	r	2.13 in / 54 mm
i	1.18 in / 30 mm	s	0.12 in / 3 mm
j	0.02 in / 0.6 mm	t	0.94 in / 24 mm

CPV Valve Manifolds

Valve Manifold with Individual Solenoid Connections

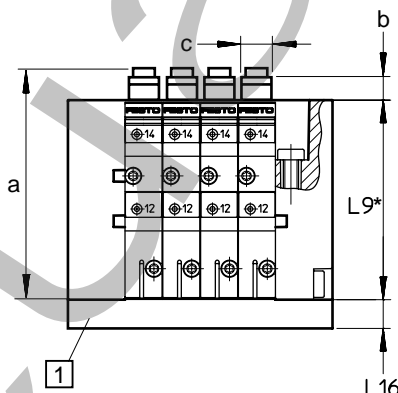
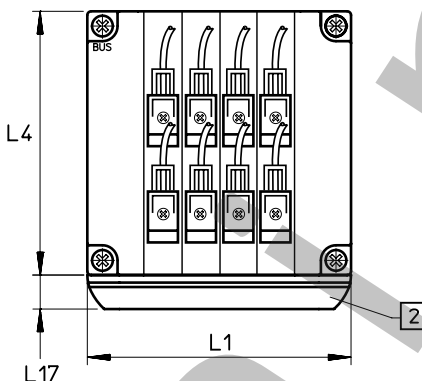
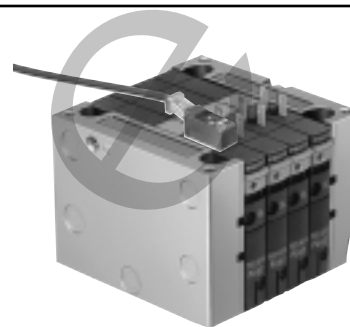
Valve Manifold with Individual Solenoid Connections

Type CPV-...-VI-IC-...

The valve manifold, Type CPV-VI-IC-..., available with two to eight valve positions, enables each valve to be individually connected via a separate cable. Valves and cables are not polarity specific.

A pneumatic multipole plate is available which contains all pneumatic connections on one removable plate that mounts to the bottom of the manifold, simplifying installation and maintenance.

Individual Solenoid Connections
Type CPV-...-VI-IC-...



* Note: 5/3 valves (Code G) for 10 and 14 mm manifolds have a sub-base extension which increases the height of the valve (dim. L9). This extension mounts directly to the bottom of the valve or beneath the pneumatic multipole. The added height for the extension is:

CPV 10: add 0.866 in / 22 mm
CPV 14: add 1.102 in / 28 mm

Dimensions

- a ~2.56 in / 65 mm
- b 0.32 in / 8.1 mm
- c 0.39 in / 9.8 mm

- ① Pneumatic multipole
- ② Identification label holder

See page 63 for pneumatic multipole.
See page 118 for cables and sockets.

Dimensions

	Micro Valve Manifold (10 mm) CPV-10-...-VI-IC-...				Mini Valve Manifold (14 mm) CPV-14-...-VI-IC-...				Midi Valve Manifold (18 mm) CPV-18-...-VI-IC-...			
	2 valve positions in / mm	4 valve positions in / mm	6 valve positions in / mm	8 valve positions in / mm	2 valve positions in / mm	4 valve positions in / mm	6 valve positions in / mm	8 valve positions in / mm	2 valve positions in / mm	4 valve positions in / mm	6 valve positions in / mm	8 valve positions in / mm
L 1	1.97 / 50	2.76 / 70	3.54 / 90	4.33 / 110	2.68 / 68	3.78 / 96	4.88 / 124	5.98 / 152	3.78 / 96	5.20 / 132	6.61 / 168	8.03 / 204
L 4	2.76 / 70				3.43 / 87.07				4.57 / 116.2			
L 9*	2.08 / 52.8				2.31 / 58.80				2.87 / 73			
L 16	0.59 / 15				0.79 / 20				0.79 / 20			
L 17					0.37 / 9.5							

CPV Valve Manifolds

Valve Manifold with Multipin Interface

Valve Manifold With Multipin Interface

Type CPV-...-VI-MP-...

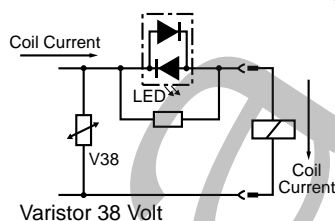


The valve manifold, Type CPV-VI-MP-..., available with four, six, or eight valve positions, has a plug-in multipin electrical connection in the cover cap. When used in conjunction with the Festo cable and plug assembly, the manifold is IP65 rated. Both NPN and PNP output devices can be used. Installation is simplified by one integrated cable 24V DC to the manifold. The manifold cover cap also contains LED status indicators and protective circuitry for the valves.

A pneumatic multipole plate is available which contains all pneumatic connections on one removable plate that mounts to the bottom of the manifold, simplifying installation and maintenance.

Multipin Interface
Type CPV-...-VI-MP-...

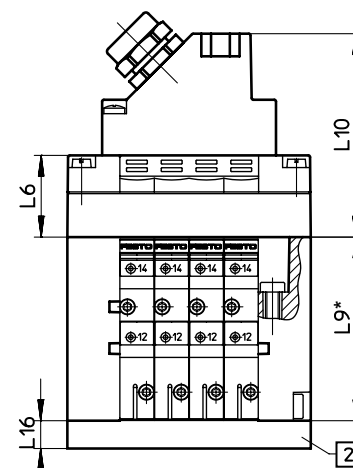
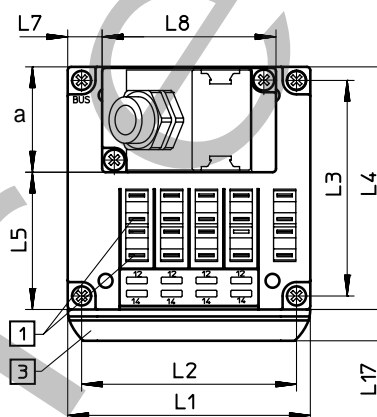
Multipin Protective Circuit



Dimensions

a 1.18 in / 30 mm

- 1 Grooves for identification plate
- 2 Pneumatic multipole
- 3 Identification label holder



* Note: 5/3 valves (Code G) for 10 and 14 mm manifolds have a sub-base extension which increases the height of the valve (dim. L9). This extension mounts directly to the bottom of the valve or beneath the pneumatic multipole. The added height for the extension is:

CPV 10: add 0.866 in / 22 mm

CPV 14: add 1.102 in / 28 mm

See page 63 for pneumatic multipole.
See page 118 for connectors and pin outs.

Dimensions

	Micro Valve Manifold (10 mm) CPV-10-VI-MP-...			Mini Valve Manifold (14 mm) CPV-14-VI-MP-...			Midi Valve Manifold (18 mm) CPV-18-VI-MP-...		
	4 valve positions in / mm	6 valve positions in / mm	8 valve positions in / mm	4 valve positions in / mm	6 valve positions in / mm	8 valve positions in / mm	4 valve positions in / mm	6 valve positions in / mm	8 valve positions in / mm
L 1	2.76 / 70	3.54 / 90	4.33 / 110	3.94 / 96	4.88 / 124	5.98 / 152	5.20 / 132	6.61 / 168	8.03 / 204
L 2	2.43 / 61.8	3.22 / 81.8	4.0 / 101.8	3.39 / 86	4.49 / 114	5.59 / 142	4.78 / 121.5	6.20 / 157.5	7.62 / 193.5
L 3		2.44 / 62			3.07 / 78			4.19 / 106.5	
L 4		2.76 / 70			3.43 / 87.07			4.57 / 116.2	
L 5		1.56 / 39.50			2.43 / 61.80			3.48 / 88.4	
L 6		0.96 / 23.5			0.96 / 23.5			1.10 / 28	
L 7	0.39 / 10		0.79 / 20	0.91 / 23	1.06 / 27	1.61 / 41	1.61 / 41	1.93 / 49	2.64 / 67
L 8	1.97 / 50	2.76 / 70		1.97 / 50	2.76 / 70		1.97 / 50	2.76 / 70	
L 9*		2.07 / 52.8			2.31 / 58.80			2.87 / 73	
L 10	—	2.30 / 58.50		—	2.30 / 58.50		—	2.48 / 63	
L 16		0.59 / 15			0.79 / 20			0.79 / 20	
L 17					0.37 / 9.5				

CPV Valve Manifolds

Multipin Manifold Order Form

- 1 Choose valve size, 10, 14 or 18 mm, and enter below.
- 2 Choose number of stations and enter quantity below.

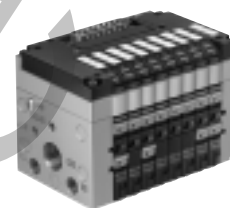
# of Stations	Micro Manifold (10 mm)	Mini Manifold (14 mm)	Midi Manifold (18 mm)
8	CPV10-VI-MP-8	CPV14-VI-MP-8	CPV18-VI-MP-8
6	CPV10-VI-MP-6	CPV14-VI-MP-6	CPV18-VI-MP-6
4	CPV10-VI-MP-4	CPV14-VI-MP-4	CPV18-VI-MP-4

Manifold Part Nos.

10 mm - 18200

14 mm - 18210

18 mm - 18220



- ### 3 Working port connections with fittings pre-assembled
- (For Inch series fittings, enter code C and append text entry with fittings desired.)

Code	10 mm	14 mm	18 mm
A	QS 6	QS 8	QS 10
B	QS 4	QS 6	QS 8
C	Threaded connections without fittings		

[illegible]

Enter Configuration Codes																0	1	2	3	4	5	6	7	Accessories									
1	0	P	-			-			-	M	P	-		-		-																	
		1				2		3						4		5		6										7					

- 6 Valves (Choose valve functions and enter codes above.)**

Code	Description	10 mm Micro Manifold	14 mm Mini Manifold	18 mm Midi Manifold
Valves (Choose valve functions and enter codes above.)				
M	5/2 Single Solenoid Valve	CPV10-M1H-5LS-M7	CPV14-M1H-5LS-1/8	CPV18-M1H-5LS-1/4
J	5/2 Double Solenoid Valve	CPV10-M1H-5JS-M7	CPV14-M1H-5JS-1/8	CPV18-M1H-5JS-1/4
G	5/3 Double Solenoid Valve	CPV10-M1H-2x3GLS-5/3	CPV14-M1H-2x3GLS-5/3	CPV18-M1H-5/3-GS-1/4
N	2x3/2 Valve N.O.	CPV10-M1H-2x3QLS-M7	CPV14-M1H-2x3QLS-1/8	CPV18-M1H-2x3QLS-1/4
C	2x3/2 Valve N.C.	CPV10-M1H-2x3GLS-M7	CPV14-M1H-2x3GLS-1/8	CPV18-M1H-2x3GLS-1/4
H	2 x 3/2 Valves 1-N.O., 1-N.C.	CPV-10-M1H-3OLS-3GLS-M7	CPV-14-M1H-3OLS-3GLS-1/8	CPV18-M1H-3OLS-3GLS-1/4
T	Isolating Plate (Ports 1/11 closed)	CPV10-DZP	CPV14-DZP	CPV18-DZP
S	Isolating Plate (Ports 1/11, 3/5 closed)	CPV10-DZPR	CPV14-DZPR	CPV18-DZPR
L	Blank Position Plate	CPV10-RZP	CPV14-RZP	CPV18-RZP

- 4 Manual Override (Choose manual override and enter code above.)**

N	Push, spring return
R	Detented with slide

- 5 Pressure Supply Endplates (Choose endplate configuration and enter code above.)**

U	Internal S-Pilot, right side	<i>Use of an isolating plate requires pressure supply endplates on both left and right sides.</i>
V	Internal S-Pilot, left side	
W	External S-Pilot, right side	<i>With a pneumatic multipole, pressure supply from both sides is required.</i>
X	External S-Pilot, left side	
Y	Internal S-Pilot, both sides	
Z	External S-Pilot, both sides	

- Accessories (Choose desired accessories and enter codes above.)**

H	Din Rail Mounting Bracket	CPV10/14-VI-BG-NRH		
W	Wall Mounting*	CPV10/14-VI-BG-RW, CPV-18-VI-BG-RW		
M	Pneumatic Multipole (Flush mounting)	4 Station: CPV-10-VI-P4-M7 6 Station: CPV-10-VI-P6-M7 8 Station: CPV-10-VI-P8-M7	4 Station: CPV-14-VI-P4-1/8 6 Station: CPV-14-VI-P6-1/8 8 Station: CPV-14-VI-P8-1/8	4 Station: CPV-18-VI-P4-1/4 6 Station: CPV-18-VI-P6-1/4 8 Station: CPV-18-VI-P8-1/4
P	Pneumatic Multipole (Flange mounting)	4 Station: CPV10-VI-P4-M7-B 6 Station: CPV10-VI-P6-M7-B 8 Station: CPV10-VI-P8-M7-B	4 Station: CPV14-VI-P4-1/8-B 6 Station: CPV14-VI-P6-1/8-B 8 Station: CPV14-VI-P8-1/8-B	4 Station: CPV18-VI-P4-1/4-B 6 Station: CPV18-VI-P6-1/4-B 8 Station: CPV18-VI-P8-1/4-B
A	Fittings and silencers preassembled on manifold end plates			
B	No manual desired			
R	Multi-pin Cable, 5 meters	4 Stations: KMP3-9P-08-5 Over 4 Stations: KMP3-25P-16-5		
S	Multi-pin Cable, 10 meters	4 Stations: KMP3-9P-08-10 Over 4 Stations: KMP3-25P-16-10		
Y	Multi-pin Plug	4 Stations: SD-SUB-D-BU9 Over 4 Stations: SD-SUB-D-BU25		
Z	Label Holders	CPV10-VI-BZ-T-X	CPV14-VI-BZ-T-X	CPV18-VI-BZ-T-X
—	Labels for valves	IBS 6x10 18576		IBS 9x20 18182

Quick Star push-pull fittings are ordered separately, see pages 173-174.

* DIN rail and wall mounting not available with pneumatic multipole.

Subject to change

CPV Valve Manifolds

Valve Manifold with AS-Interface

Valve Manifold With AS-Interface

Type CPV-...-VI-...

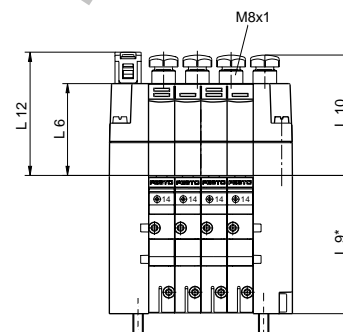
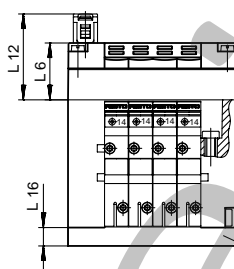
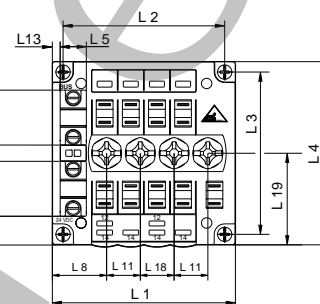
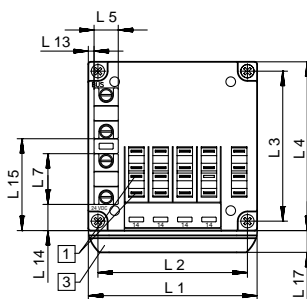


CPV valve manifolds with AS-Interface are available with two or four valve positions, and have plug-in electrical connections for integrating the manifold into ASi (Actuator-Sensor-Interface) networks via a specially-contoured, two-wire yellow cable, which transmits both 24V DC power and the control signals. The profiled cable can be mounted only one way, preventing incorrect polarity. For applications requiring separate power to the solenoids, an additional (black) profiled cable is available.

Each ASi manifold is assigned four output locations, permitting connection of up to four single-solenoid 5/2 valves or two double solenoid valves per manifold.

AS = ASi manifold with standard cable
AZ = ASi manifold with separate power cable

AE = ASi manifold with separate power cable and 4 additional integral sensor inputs/outputs
AO = ASi manifold with 4 integral sensor inputs/outputs



See page 63 for pneumatic multipole.
See page 118 for cables.

- 1 Grooves for identification plate
- 2 Pneumatic multipole
- 3 Identification label holder

* Note: 5/3 valves (Code G) for 10 and 14 mm manifolds have a sub-base extension which increases the height of the valve (dim. L9). This extension mounts directly to the bottom of the valve or beneath the pneumatic multipole. The added height for the extension is:

CPV 10: add 0.866 in / 22 mm
CPV 14: add 1.102 in / 28 mm

Dimensions

	10 mm Valve Manifold, CPV-10...-VI-			14 mm Valve Manifold, CPV-14...-VI-			18 mm Valve Manifold	
	AS (AZ)		AE (AO)	AS (AZ)		AE (AO)	CPV-18...-AS (AZ)	
	2 valve positions in / mm	4 valve positions in / mm	4 valve positions in / mm	2 valve positions in / mm	4 valve positions in / mm	4 valve positions in / mm	2 valve positions in / mm	4 valve positions in / mm
L 1	1.97 / 50	2.76 / 70	2.76 / 70	2.68 / 68	3.78 / 96	3.78 / 96	3.78 / 96	5.20 / 132
L 2	1.65 / 41.8	2.43 / 61.8	2.43 / 61.8	2.28 / 58	3.39 / 86	3.39 / 86	3.37 / 85.5	4.78 / 121.5
L 3	2.44 / 62		2.44 / 62	3.07 / 78		3.07 / 78	4.19 / 106.5	
L 4	2.76 / 70		2.76 / 70	3.43 / 87		3.43 / 87	4.57 / 116.2	
L 5				0.39 / 10				
L 6	0.93 / 23.5		1.38 / 35.1	0.93 / 23.5		1.38 / 35.1	1.10 / 28	
L 7				0.83 / 21				
L 8	-		0.82 / 20.75	-		0.98 / 25	-	
L 9*	2.08 / 52.8		2.08 / 52.8	2.31 / 58.8		2.31 / 58.8	2.87 / 73	
L 10	-		1.81 / 46	-		1.81 / 46	-	
L 11	-		0.51 / 12.9	-		0.55 / 14	-	
L 12	1.40 / 35.5		1.85 / 47.1	1.40 / 35.5		1.85 / 47.1	1.57 / 40	
L 13	0.10 / 2.5		0.12 / 3	0.20 / 5		0.20 / 5	0.41 / 10.4	
L 14	0.43 / 10.9		0.43 / 10.9	0.55 / 14		0.74 / 18.8	1.08 / 27.4	
L 15	1.50 / 38.1		1.50 / 38.1	2.05 / 52		1.84 / 46.8	2.37 / 60.2	
L 16	0.59 / 15		-	0.79 / 20		-	0.79 / 20	
L 17	0.37 / 9.5		-	0.37 / 9.5		-	0.37 / 9.5	
L 18	-		0.51 / 12.9	-		0.71 / 18	-	
L 19	-		1.38 / 35	-		1.70 / 43.3	-	

CPV Valve Manifolds

ASi Manifold Order Form

FESTO

1 Choose valve size, 10, 14 or 18 mm, and enter below.

2 Choose number of stations and enter quantity below.

Manifold Part Nos.

10 mm - 18200

14 mm - 18210

18 mm - 18220

# of Stations	Micro Manifold (10 mm)	Mini Manifold (14 mm)	Midi Manifold (18 mm)
4	CPV10-VI-AS-4	CPV14-VI-AS-4	CPV18-VI-AS-4
	CPV10-VI-AZ-4	CPV14-VI-AZ-4	CPV18-VI-AZ-4
	CPV10-VI-AE-4	CPV14-VI-AE-4	
	CPV10-VI-AO-4	CPV14-VI-AO-4	
2	CPV10-VI-AS-2	CPV14-VI-AS-2	CPV18-VI-AS-2
	CPV10-VI-AZ-2	CPV14-VI-AZ-2	CPV18-VI-AZ-2

3 Working port connections with fittings pre-assembled
(For Inch series fittings, enter code C and append text entry with fittings desired.)

Code	10 mm	14 mm	18 mm
A	QS 6	QS 8	QS 10
B	QS 4	QS 6	QS 8
C	Threaded connections without fittings		

Endplate																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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4 Specify ASi Manifold Type

AS = ASi Standard Connection
AZ = ASi with separate power cable connection

AE = ASi, separate power 4 inputs

AO = ASi, 4 inputs

Enter Configuration Codes															0	1	2	3	Accessories									
1	0	P	-																									

1

2

3

4

5

6

7

8

7 Valves (Choose valve functions and enter codes above.)

Code	Description	10 mm Micro Manifold	14 mm Mini Manifold	18 mm Midi Manifold
M	5/2 Single Solenoid Valve	CPV10-M1H-5LS-M7	CPV14-M1H-5LS-1/8	CPV18-M1H-5LS-1/4
J	5/2 Double Solenoid Valve	CPV10-M1H-5JS-M7	CPV14-M1H-5JS-1/8	CPV18-M1H-5JS-1/4
G	5/3 Double Solenoid Valve, N.C.	CPV10-M1H-2x3GLS-5/3	CPV14-M1H-2x3GLS-5/3	CPV18-M1H-5/3-GS-1/4
N	2x3/2 Valve N.O.	CPV10-M1H-2x3OLS-M7	CPV14-M1H-2x3OLS-1/8	CPV18-M1H-2x3OLS-1/4
C	2x3/2 Valve N.C.	CPV10-M1H-2x3GLS-M7	CPV14-M1H-2x3GLS-1/8	CPV18-M1H-2x3GLS-1/4
H	2 x 3/2 Valves 1-N.O., 1-N.C.	CPV-10-M1H-3OLS-3GLS-M7	CPV-14-M1H-3OLS-3GLS-1/8	CPV18-M1H-3OLS-3GLS-1/4
T	Isolating Plate (Ports 1/11 closed)	CPV10-DZP	CPV14-DZP	CPV18-DZP
S	Isolating Plate (Ports 1/11, 3/5 closed)	CPV10-DZPR	CPV14-DZPR	CPV18-DZPR
L	Blank Position Plate	CPV10-RZP	CPV14-RZP	CPV18-RZP

5 Manual Override (Choose manual override and enter code above.)

N	Push, spring return (momentary)
R	Detented with slide

6 Pressure Supply Endplates (Choose endplate configuration and enter code above.)

U	Internal S-Pilot, right side
V	Internal S-Pilot, left side
W	External S-Pilot, right side
X	External S-Pilot, left side
Y	Internal S-Pilot, both sides
Z	External S-Pilot, both sides

Use of an isolating plate requires pressure supply endplates on both left and right sides.

With a pneumatic multipole, pressure supply from both sides is required.

8 Accessories (Choose desired accessories and enter codes above.)

H	Din Rail Mounting Bracket*	CPV10/14-VI-BG-NRH-35		
W	Wall Mounting*	CPV10/14-VI-BG-RW, CPV18-VI-BG-RW		
M	Pneumatic Multipole (Flush mounting)	2 Station: CPV-10-VI-P2-M7 4 Station: CPV-10-VI-P4-M7	2 Station: CPV-14-VI-P2-1/8 4 Station: CPV-14-VI-P4-1/8	2 Station: CPV-18-VI-P2-1/4 4 Station: CPV-18-VI-P4-1/4
P	Pneumatic Multipole (Flange mounting)	2 Station: CPV10-VI-P2-M7-B 4 Station: CPV10-VI-P4-M7-B	2 Station: CPV14-VI-P2-1/8-B 4 Station: CPV14-VI-P4-1/8-B	2 Station: CPV18-VI-P2-1/4-B 4 Station: CPV18-VI-P4-1/4-B
A	Fittings and silencers preassembled on manifold end plates			
B	No manual desired			
Z	Label holder, front mounting	CPV10-V1-BZ-TX	CPV14-V1-BZ-TX	CPV18-V1-BZ-TX
—	Labels for valves	IBS 6x10 18576		IBS 9x20 18182
—	ASi Cable Distrib. (reversed)	ASI-KVT-FK	18786	} Order separately
—	ASi Cable Distrib. (reversed)	ASI-KVT-FK-S	18797	
—	ASi Cable (yellow, 100 m)	KASI-1.5-Y-100	18940	
—	ASi Cable (additional, black, 100 m)	KASI-1.5-Z-100	18941	
—	Flat cable connector	ASI-SD-FK	18785	
—	I/O Connector (straight)	SEA-GS-M8	18696	

Quick Star push-pull fittings are ordered separately, see pages 173-174.

CPV Valve Manifolds

Valve Manifold with DeviceNet Direct Link Interface, and CAN open

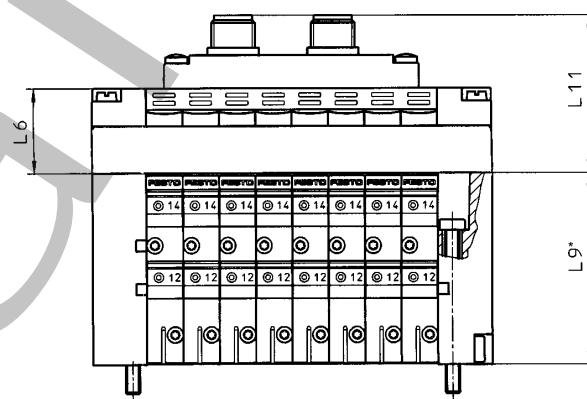
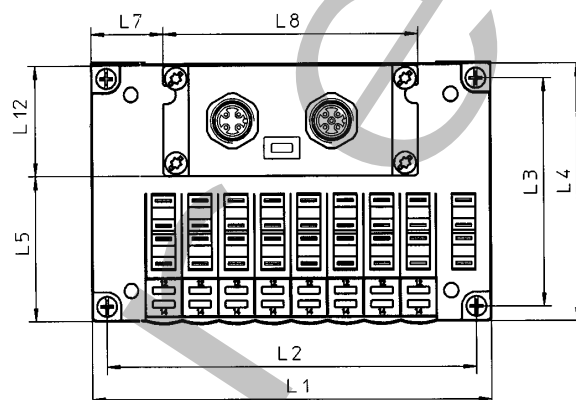
Valve Manifold With DeviceNet Direct Link

Type CPV-...-GE-DN-8
CPV-...-GE-CO-8



The valve manifold, Type CPV-GE-DN-8 is available with eight valve positions. Valve manifolds with DeviceNet Direct Link are available with 10 mm, 14 mm and 18 mm valves, in any combination. The DeviceNet compliant electronics are implemented using modern, double-sided surface mount technology for reliable operation. No trouble-prone discrete wiring is used. Operating power is derived from the DeviceNet bus. The full DeviceNet permissible range (11-28V DC) is supported. Solenoids are powered by a separate connector, enabling E-stop functions and applying less burden to the DeviceNet Network.

DeviceNet Direct
Link Interface
Type CPV-...-GE-DN-8



- 1 Grooves for identification plate
- 2 Pneumatic multipole
- 3 Identification label holder

* Note: 5/3 valves (Code G) for 10 and 14 mm manifolds have a sub-base extension which increases the height of the valve (dim. L9). This extension mounts directly to the bottom of the valve or beneath the pneumatic multipole. The added height for the extension is:
CPV 10: add 0.866 in / 22 mm
CPV 14: add 1.102 in / 28 mm

See page 63 for pneumatic multipole.
See pages 116-117 for cables and connectors.

Dimensions

	Micro Valve Manifold (10 mm) CPV-10-...-GE-...-8	Mini Valve Manifold (14 mm) CPV-14-...-GE-...-8	Midi Valve Manifold (18 mm) CPV-18-...-GE-...-8
	8 valve positions in / mm	8 valve positions in / mm	8 valve positions in / mm
L 1	4.33 / 110	5.98 / 152	8.03 / 204
L 2	4.01 / 102	5.59 / 142	7.61 / 194
L 3	2.44 / 62	3.07 / 78	4.19 / 107
L 4	2.44 / 70	3.42 / 87	4.57 / 116
L 5	1.55 / 40	2.43 / 62	3.48 / 88.4
L 6	0.93 / 23.5	0.93 / 23.5	1.10 / 28
L 7	0.79 / 20	1.61 / 41	2.64 / 67
L 8	2.75 / 70	2.75 / 70	2.75 / 70
L 9*	2.08 / 52.8	2.32 / 58.8	2.87 / 73
L 10	2.30 / 58.5	2.30 / 58.5	2.48 / 63
L 11	1.81 / 46	1.81 / 46	1.98 / 50.5
L 12	1.18 / 30	1.18 / 30	1.18 / 30

CPV Valve Manifolds

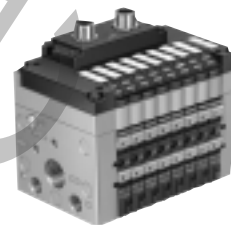
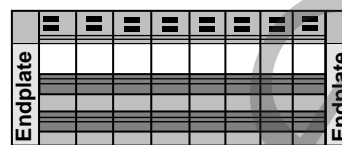
Direct Link Manifold Order Form

FESTO

- 1 Choose valve size, 10, 14 or 18 mm, and enter below.
Manifolds are available with 8 stations only.

Manifold Part Nos.

10 mm - 18200
14 mm - 18210
18 mm - 18220



- 2 **Working port connections with fittings pre-assembled**
(For Inch series fittings, enter code C and append text entry with fittings desired.)

Code	10 mm	14 mm	18 mm
A	QS 6	QS 8	QS 10
B	QS 4	QS 6	QS 8
C	Threaded connections without fittings		

- 3 Choose manifold type:
N2 = DeviceNet Direct Link
C2 = CAN Open
D1 = Profibus-DP (12MBd), ABB CS1
Klöckner- Möeller, SUCONETK, Festo Fieldbus†

Enter Configuration Codes														0	1	2	3	4	5	6	7	Accessories						
1	0	P	-			-	8	C	-			-						+										
		1		2		3		4		5		6		7														

6	Valves (Choose valve functions and enter codes above.)				
M	5/2 Single Solenoid Valve	CPV10-M1H-5LS-M7	CPV14-M1H-5LS-1/8	CPV18-M1H-5LS-1/4	
J	5/2 Double Solenoid Valve	CPV10-M1H-5JS-M7	CPV14-M1H-5JS-1/8	CPV18-M1H-5JS-1/4	
G	5/3 Double Solenoid Valve	CPV10-M1H-2x3GLS-5/3	CPV14-M1H-2x3GLS-5/3	CPV18-M1H-5/3-GS-1/4	
N	2x3/2 Valve N.O.	CPV10-M1H-2x3OLS-M7	CPV14-M1H-2x3OLS-1/8	CPV18-M1H-2x3OLS-1/4	
C	2x3/2 Valve N.C.	CPV10-M1H-2x3GLS-M7	CPV14-M1H-2x3GLS-1/8	CPV18-M1H-2x3GLS-1/4	
H	2x3/2 Valves 1-N.O., 1-N.C.	CPV-10-M1H-3OLS-3GLS-M7	CPV-14-M1H-3OLS-3GLS-1/8	CPV18-M1H-3OLS-3GLS-1/4	
T	Isolating Plate (Ports 1/11 closed)	CPV10-DZP	CPV14-DZP	CPV18-DZP	
S	Isolating Plate (Ports 1/11, 3/5 closed)	CPV10-DZPR	CPV14-DZPR	CPV18-DZPR	
L	Blank Position Plate	CPV10-RZP	CPV14-RZP	CPV18-RZP	
4	Manual Override (Choose manual override and enter code above.)				
N	Push, spring return				
R	Detented with slide				
5	Pressure Supply Endplates (Choose endplate configuration and enter code above.)				
U	Internal S-Pilot, right side	<i>Use of an isolating plate requires pressure supply endplates on both left and right sides.</i> <i>With a pneumatic multipole, pressure supply from both sides is required.</i>			
V	Internal S-Pilot, left side				
W	External S-Pilot, right side				
X	External S-Pilot, left side				
Y	Internal S-Pilot, both sides				
Z	External S-Pilot, both sides				
7	Accessories (Choose desired accessories and enter codes above.)				
H	Din Rail Mounting Bracket*	CPV10/14-VI-BG-NRH-35		CPV18-VI-BG-NRH-35	
W	Wall Mounting*	CPV10/14-VI-BG-RW		CPV18-VI-BG-RW	
M	Pneumatic Multipole (Flush mounting)	8 Station: CPV-10-VI-P8-M7	8 Station: CPV-14-VI-P8-1/8	8 Station: CPV-18-VI-P8-1/4	
P	Pneumatic Multipole (Flange mounting)	8 Station: CPV10-VI-P8-M7-B	8 Station: CPV14-VI-P8-1/8-B	8 Station: CPV18-VI-P8-1/4-B	
A	Fittings and silencers preassembled on manifold end plates				
B	No manual desired				
Z	Label Holder, front mounting	CPV10-VI-BZ-T-X	CPV14-VI-BZ-T-X	CPV18-VI-BZ-T-X	
—	Labels for valves	IBS 6x10 18576		IBS 9x20 18182	
	Connector Straight, Pg 7	for Power	FBSD-GD-7	18497	
	Connector Straight, Pg 9	for Power	FBSD-GD-9	18495	
	Connector Straight, Pg 13.5	for Power	FBSD-GD-13.5	18496	
	Connector Right Angle, Pg 7	for Power	FBSD-WD-7	18524	
	Connector Right Angle, Pg 9	for Power	FBSD-WD-9	18525	
	Fieldbus Connector (Straight, Pg 9), 5 Pin (F 11)		FBSD-GD-9-5POL	18324	
	Fieldbus Connector Sub-D for Profibus DP		FBS-SUB-9-GS-9	18529	
	Connector Set for Interbus Loop		FBS-IBL-PG11/13	175485	
				Order separately	

Order separately

Quick Star push-pull fittings are ordered separately, see pages 173-174.

†Contact Festo

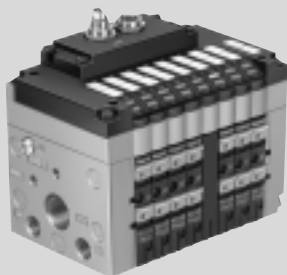
* DIN rail and wall mounting not available with pneumatic multipole.

CPV Valve Manifolds

Valve Manifold with Fieldbus Interface

Valve Manifold With Fieldbus Interface

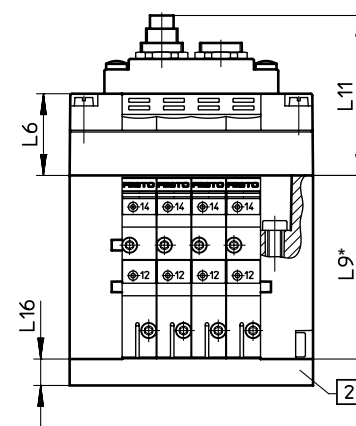
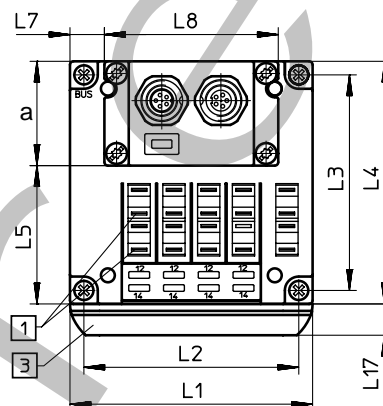
Type CPV-...-VI-FB-...



The valve manifold, Type CPV-VI-FB-..., available with four, six, or eight valve positions, has plug-in electrical connections for integrating the manifold into fieldbus networks via twisted wire cable to a separate fieldbus node. A second plug-in connection is provided for connecting a separate electrical input/output module in series. Electrical power and control signals are transmitted over the twisted wire cable. Up to four branches with max. 16 inputs and 16 outputs each can be connected to one fieldbus node, Type FB-..., depending on the fieldbus protocol selected.

A pneumatic multipole plate is available which contains all pneumatic connections on one removable plate that mounts to the bottom of the manifold, simplifying installation and maintenance.

Fieldbus Interface
Type CPV-...-VI-FB-...



Dimensions

a 1.18 in / 30 mm

- 1 Grooves for identification plate
- 2 Pneumatic multipole
- 3 Identification label holder

* Note: 5/3 valves (Code G) for 10 and 14 mm manifolds have a sub-base extension which increases the height of the valve (dim. L9). This extension mounts directly to the bottom of the valve or beneath the pneumatic multipole. The added height for the extension is:

CPV 10: add 0.866 in / 22 mm

CPV 14: add 1.102 in / 28 mm

See page 63 for pneumatic multipole.
See page 116 for cables.

Dimensions

	Micro Valve Manifold (10 mm) CPV-10-...-VI-FB-...			Mini Valve Manifold (14 mm) CPV-14-...-VI-FB-...			Midi Valve Manifold (18 mm) CPV-18-...-VI-FB-...		
	4 valve positions in / mm	6 valve positions in / mm	8 valve positions in / mm	4 valve positions in / mm	6 valve positions in / mm	8 valve positions in / mm	4 valve positions in / mm	6 valve positions in / mm	8 valve positions in / mm
L 1	2.76 / 70	3.54 / 90	4.33 / 110	3.94 / 96	4.88 / 124	5.98 / 152	5.20 / 132	6.61 / 168	8.03 / 204
L 2	2.43 / 61.8	3.22 / 81.8	4.0 / 101.8	3.39 / 86	4.49 / 114	5.59 / 142	4.78 / 121.5	6.20 / 157.5	7.62 / 193.5
L 3		2.44 / 62			3.07 / 78			4.19 / 106.5	
L 4		2.76 / 70			3.43 / 87.07			4.57 / 116.2	
L 5		1.56 / 39.50			2.43 / 61.80			3.48 / 88.4	
L 6			0.93 / 23.5					1.10 / 28	
L 7	0.39 / 10		0.79 / 20	0.91 / 23	1.06 / 27	1.61 / 41	1.61 / 41	1.93 / 49	2.64 / 67
L 8	1.97 / 50	2.76 / 70		1.97 / 50	2.76 / 70		1.97 / 50	2.76 / 70	
L 9*		2.07 / 52.8			2.31 / 58.80			2.87 / 73	
L 11		1.81 / 46			1.81 / 46			2.48 / 63	
L 16		0.59 / 15			0.79 / 20			0.79 / 20	
L 17					0.37 / 9.5				

-

- [illegible]

Code	Description	10 mm Micro Manifold	14 mm Mini Manifold	18 mm Midi Manifold
Valves (Choose valve functions and enter codes above.)				
M	5/2 Single Solenoid Valve	CPV10-M1H-5LS-M7	CPV14-M1H-5LS-1/8	CPV18-M1H-5LS-1/4
J	5/2 Double Solenoid Valve	CPV10-M1H-5JS-M7	CPV14-M1H-5JS-1/8	CPV18-M1H-5JS-1/4
G	5/3 Double Solenoid Valve	CPV10-M1H-2x3GLS-5/3	CPV14-M1H-2x3GLS-5/3	CPV18-M1H-5/3-GS-1/4
N	2x3/2 Valve N.O.	CPV10-M1H-2x3OLS-M7	CPV14-M1H-2x3OLS-1/8	CPV18-M1H-2x3OLS-1/4
C	2x3/2 Valve N.C.	CPV10-M1H-2x3GLS-M7	CPV14-M1H-2x3GLS-1/8	CPV18-M1H-2x3GLS-1/4
H	2x3/2 Valves 1-N.O., 1-N.C.	CPV-10-M1H-3OLS-3GLS-M7	CPV-14-M1H-3OLS-3GLS-1/8	CPV18-M1H-3OLS-3GLS-1/4
T	Isolating Plate (Ports 1/11 closed)	CPV10-DZPR	CPV14-DZPR	CPV18-DZPR
S	Isolating Plate (Ports 1/11, 3/5 closed)	CPV10-DZPR	CPV14-DZPR	CPV18-DZPR
L	Blank Position Plate	CPV10-RZP	CPV14-RZP	CPV18-RZP
R	Relav Plate	CPV10-RP2	CPV14-RP2	—

- | | | |
|---|---|---------------------|
| 4 | N | Push, spring return |
| | R | Detented with slide |

- | | | |
|----------|------------------------------|---|
| U | Internal S-Pilot, right side | <p><i>Use of an isolating plate requires pressure supply endplates on both left and right sides.</i></p> <p><i>With a pneumatic multipole, pressure supply from both sides is required.</i></p> |
| V | Internal S-Pilot, left side | |
| W | External S-Pilot, right side | |
| X | External S-Pilot, left side | |
| Y | Internal S-Pilot, both sides | |
| Z | External S-Pilot, both sides | |

- | | | | | |
|----------|--|-----------------------------------|-----------------|-----------------|
| H | Din Rail Mounting Bracket* | CPV10/14-VI-BG-NRH-35 | | |
| W | Wall Mounting* | CPV10/14-VI-BG-RW, CPV18-VI-BG-RW | | |
| M | Pneumatic Multipole
(Flush mounting) | | | |
| P | Pneumatic Multipole
(Flange mounting) | | | |
| A | Fittings and silencers preassembled on manifold end plates | | | |
| K | Cable/Socket for relay plate, 8.2 ft / 2.5 m | KRP-1-24-2.5 | KRP-1-24-2.5 | — |
| L | Cable/Socket for relay plate, 16.4 ft / 5 m | KRP-1-24-5.0 | KRP-1-24-5.0 | — |
| B | No manual desired | | | |
| Z | Label Holder | CPV10-VI-BZ-T-X | CPV14-VI-BZ-T-X | CPV18-VI-BZ-T-X |
| — | Labels for valves | IBS 6x10 18576 | | IBS 9x20 18182 |

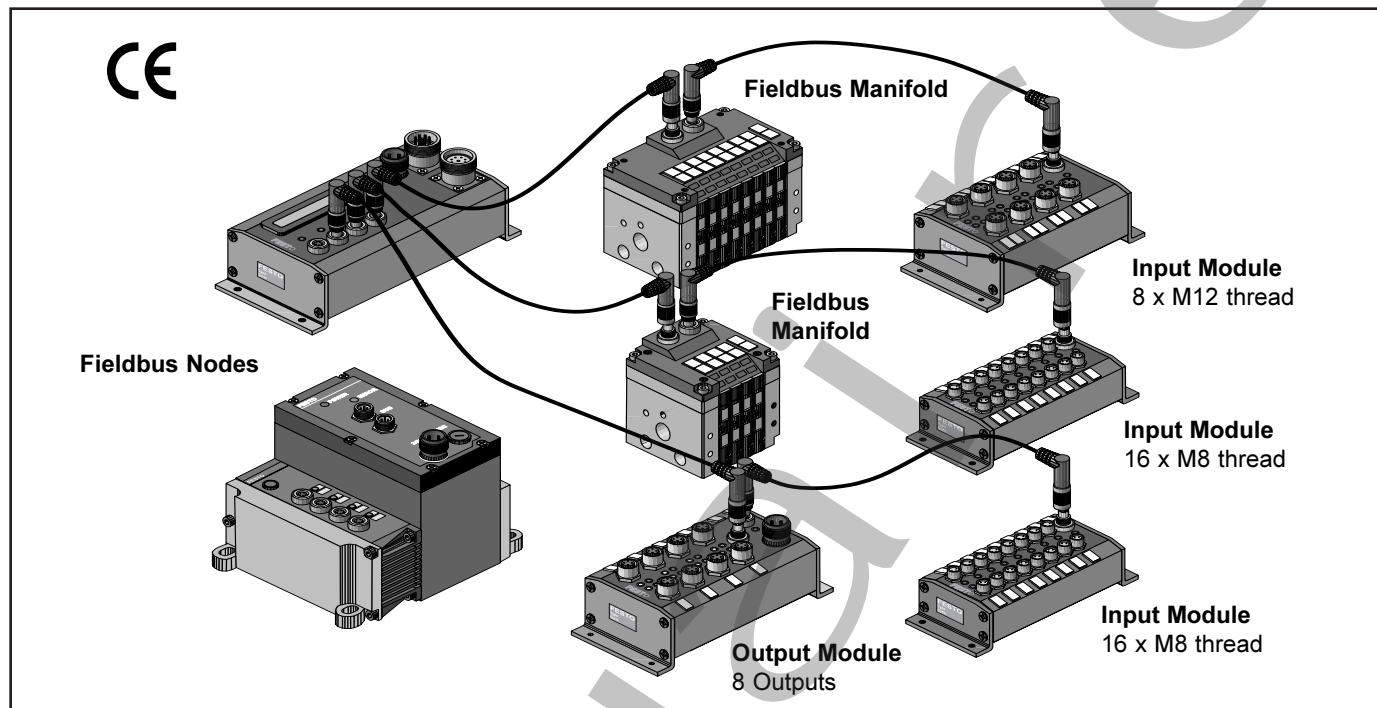
* DIN rail and wall mounting not available with pneumatic multipole.

CPV Valve Manifolds

Electrical Ordering Instructions

All Festo products can be ordered from your local Festo Distributor or from Festo Regional Centers (see back cover).

Decentralized CPV Fieldbus Valve Manifold System



The modular CPV Fieldbus Valve Manifold System is made up of an Electrical and a Pneumatic Configuration.

Electrical Ordering Instructions (configured on the next page)

- 1 Choose Fieldbus node and enter codes in the tables on next page.
- 2 Specify type of cables and enter codes in tables on next page.
Note: The sum of cables in any branch cannot exceed 30 ft. / 10 m.
- 3 Choose a Fieldbus Pneumatic Valve Manifold, input modules or output modules and enter codes in tables.
- 4 Choose input modules and enter codes.
Note: Two input modules cannot be specified in any single branch.
- 5 Choose desired accessories, enter code in box, and specify quantity.

CP I/O

Code	Fieldbus Type	Max. Input per manifold	Max. Output per manifold (incl. solenoid)
FB5	Festo, ABB, Klöckner-Möller	64	64
FB6	Interbus-S	64	64
FB8	Allen Bradley	64	64
FB9	Profibus-DP	64	64
FB11	DeviceNet	64	64
FB13	Profibus-DP (12 MB)	64	64
SF3	Festo PLC	64	64
SB/SF60	A-B SLC 500™	64	64

Fieldbus Node / Connector Cross-reference Table

		Fieldbus Node							
Code	Connector	FB5	FB6	FB8	FB9*	FB11	FB13	SF60	SF3
N	NTSD-GD-9 (Power)	✓	✓	✓	✓	✓	✓	✓	✓
M	NTSD-GD-13.5 (Power)	✓	✓	✓	✓	✓	✓	✓	✓
I	NTSD-WD-9 (Power)	✓	✓	✓	✓	✓	✓	✓	✓
Z	FBSD-GD-7 (Fieldbus)			✓					✓
T	FBSD-GD-9 (Fieldbus)			✓					✓
U	FBSD-GD-13.5 (Fieldbus)			✓					
F	FBSD-WD-7 (Fieldbus)			✓					✓
G	FBSD-WD-9 (Fieldbus)			✓					✓
D	FBSD-GD-9-5POLE (Fieldbus)					✓		✓	
V	FBS-SUB-9-GS-9 (Fieldbus)	✓			✓		✓		
	FB-TA-M12-5POL 171175					✓		✓	
	KDI-SB60-10.0 171174							✓	
	KDI-SB202-BU-25 30437								✓
	KABG-SB202-ST-9 150288								✓

CPA Valve Manifolds

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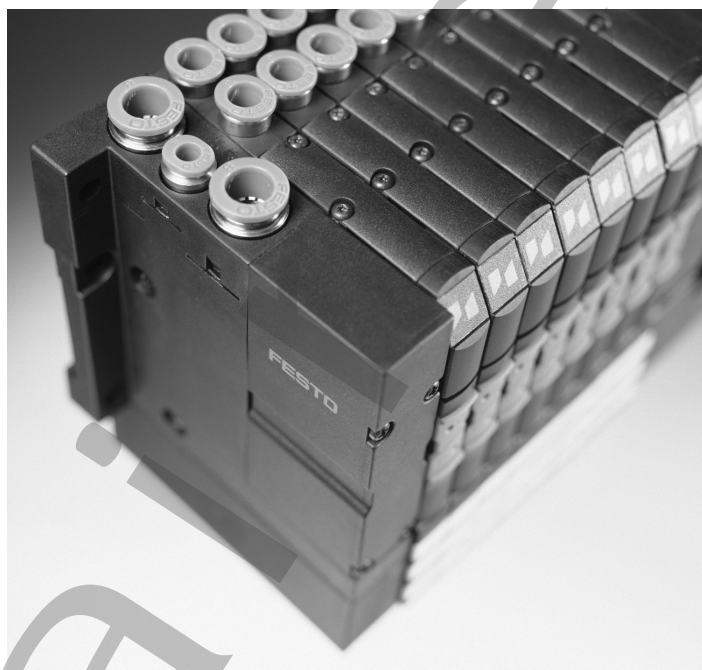
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The increasing degree of automation in machinery poses new requirements for valve manifold technology. Fulfill these requirements with "Compact Performance" CPA pneumatic valve manifolds. They combine a totally modular manifold design concept and decentralized fieldbus networking capability to provide optimum control flexibility.

■ Compact Size

Valves available in 10 mm and 14 mm widths, high functionality for wide range of applications.

■ High Performance

Minimum electrical power consumption and minimal construction space.

10 mm = 0.35 Cv / 350 l/min, connection QS4, QS6 (QS-5/32, QS-3/16)

14 mm = 0.65 Cv / 650 l/min, connection QS6, QS8 (QS-1/4, QS-5/16)

■ Modular Plug-in Design

Allows easy expansion or modification.

■ Reliable Electronics (IP65 Rated)

Advanced connection technology for quick and interference-immune data flow.

■ All Manifolds Factory Assembled and Tested

Saves installation time, labor and cost.

CPA Valve Manifolds

Modular Valve Concept

FESTO

Four Electrical Connection Options

- **Fieldbus:** Up to 16 Valve Positions
- **AS-Interface:** 2 or 4 Valve Positions
- **Multipin:** 2 to 22 Valve Positions
- **Individual Solenoid Connections:** 2 to 22 Valve Positions

Decentralized Device
Level Networks

AS Interface (ASi)

Multipin Connection

Individual Solenoid
Connections

CE

Multiple Valve Function Combinations Possible on a Single Manifold

- 3/2 Single Solenoid Valves
- 5/2 Single Solenoid Valves
- 5/2 Double Solenoid Valves
- 5/3 Valves

Pressure Zoning

- Setting for different cylinder forces via separate pressure zones
- Simultaneous operation of pressure and vacuum
- Additional supply possible in the event of high air consumption

Convenient assembly and maintenance

- Clip-on labels
- LED status display for valves

Mounting Options

- Foot Mounting
- DIN Rail Mounting

Accessories

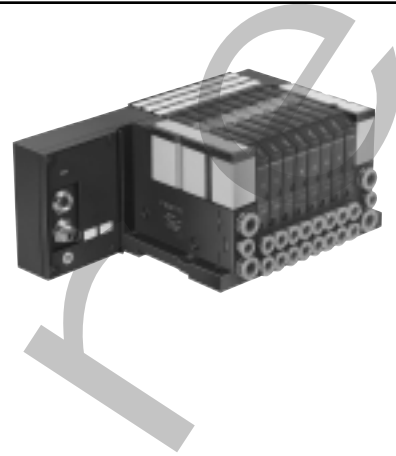
- Push-pull Fittings
- Silencers
- Solenoid Connectors and Cables

CPA Valve Manifolds

Manifold Designs, Type 12

Decentralized Device Level Networks

The Fieldbus manifold is available with up to 16 valve positions (16 solenoids total), has plug-in electrical connections for integrating the manifold into fieldbus networks via twisted wire cable to a separate fieldbus node. A second plug-in connection is provided for connecting a separate electrical input/output module in series. Electrical power and control signals are transmitted over the twisted wire cable. Up to four branches with a max. of 16 inputs and 16 outputs each can be connected to one fieldbus node, Type FB..., depending on the fieldbus protocol selected.



AS Interface

The ASi manifold is available with two or four valve positions, has plug-in electrical connections for integrating the manifold into ASi (Actuator-Sensor-Interface) networks via a specially-contoured, two-wire yellow cable, which transmits both 24V DC power and the control signals. The profiled cable can be mounted only one way, preventing incorrect polarity. For applications requiring separate power to the solenoids, an additional (black) profiled cable is available. Each ASi manifold is assigned four output locations, permitting connection of up to four single-solenoid 3/2 or 5/2 valves, two double solenoid or 2 mid-position valves per manifold.



Multipin Connection

The Multipin manifold is available with 2 to 22 valve positions (22 solenoids total), has a plug-in multipin electrical connection in the cover cap. When used in conjunction with the Festo cable and plug assembly, the manifold is IP55 rated. Both NPN and PNP output devices can be used. Installation is simplified by one integrated cable 24V DC to the manifold. The manifold cover cap also contains LED status indicators and protective circuitry for the valves.



Individual Connection

Manifolds with individual connection are available with 2 to 22 valve positions (44 solenoids total), enabling each valve to be individually connected via a separate cable. Valves and cables are not polarity specific.

